

UNITED STATES BANKRUPTCY COURT  
FOR THE WESTERN DISTRICT OF NORTH CAROLINA  
CHARLOTTE DIVISION

IN RE: )  
 )  
GARLOCK SEALING TECHNOLOGIES )  
LLC, et al, ) No. 10-BK-31607  
 )  
Debtors. ) VOLUME IIIB-AFTERNOON SESSION  
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TRANSCRIPT OF ESTIMATION TRIAL  
BEFORE THE HONORABLE GEORGE R. HODGES  
UNITED STATES BANKRUPTCY JUDGE  
JULY 24, 2013

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1 WEDNESDAY AFTERNOON, JULY 24, 2013

2 (Court called to order at 2:01 p.m.)

3 THE COURT: I sent some of you all an email about  
4 the confidentiality order.

5 I guess, Mr. Nebrig, you're probably the only one  
6 here that got it. Well, Mr. Grier and Mr. Guy.

7 I didn't even read the whole thing very well, but it  
8 looked like she wanted you to add some language.

9 MR. NEBRIG: Yeah, they wanted us to add language,  
10 but particularly wanted the court to add language too.  
11 Basically have the court say that the information that was  
12 confidential in the opening that was held was not material to  
13 EnPro or EnPro Securities. As we indicated yesterday, that's  
14 just not a standard that is something that the court can opine  
15 about at this stage because the test of materiality for  
16 shareholders is something that is specific to an average  
17 investor in EnPro Securities. So that type of comfort really  
18 is not doable from a court order.

19 I think -- I mean, I think, you know, if you think  
20 about it, though, the standard is it's probably much higher  
21 than even the standard that the whole transcript should have  
22 been confidential in the first place, Judge. I mean, that's a  
23 way to alleviate their concerns is to say there's nothing that  
24 the court saw that was necessarily confidential or should have  
25 been protected and to lift the protection from the entire

1 transcript. That will alleviate their concerns.

2 The court heard what was shown, saw what was shown.

3 And, again, I think to echo what Mr. Cassada said is that

4 the -- there is nothing confidential in that information to

5 begin with.

6 THE COURT: I think we'll probably have to hear from

7 Mr. Swett about that or Mr. Wehner. I sent them copies of the

8 thing as well.

9 MR. GUY: I think it would be fair, Your Honor, to

10 hear from the law firms on that issue, but I understand that

11 may be a solution.

12 THE COURT: Let's wait -- let's just hold that until

13 the end of the day or first thing tomorrow morning or

14 something like that.

15 MR. NEBRIG: Thank you, Judge.

16 THE COURT: Okay. Are you ready, Mr. Harris?

17 MR. HARRIS: Mr. Boelter.

18 FREDERICK WILLIAM BOELTER,

19 DIRECT EXAMINATION (Cont'd.)

20

21 BY MR. HARRIS:

22 Q. Mr. Boelter, when we broke for lunch, we talked about

23 your insulation study and the gasket studies that you have

24 done and that were published.

25 MR. HARRIS: Your Honor, I neglected to offer



1 Mr. Boelter as an expert witness on behalf of Garlock -- or on  
2 behalf of the debtors in the field of industrial hygiene.

3 THE COURT: We'll admit him as such.

4 BY MR. HARRIS:

5 Q. Mr. Boelter, this is a chart from Mr. Liukonen's  
6 examination earlier today and it lists peer reviewed studies  
7 with respect to gaskets and also his papers that he's worked  
8 on, the navy study and his 2004 paper. Is this the peer  
9 reviewed literature as you understand it with respect to  
10 asbestos gaskets?

11 A. Yes.

12 Q. Now, Dr. Longo is the committee's expert. His name is  
13 indicated there in 2002. And his data is -- looks like it's  
14 above the historical standards; is that right?

15 A. That's correct.

16 Q. Have you had an opportunity to review Dr. Longo's  
17 published paper?

18 A. Yes, I have.

19 Q. You've looked at it in detail?

20 A. Yes.

21 Q. You've looked at the underlying studies, not just the  
22 paper but the data in the papers?

23 A. Yes.

24 Q. Have you looked at his subsequent papers?

25 A. I have.

1 Q. And so I wanted to ask you about this slide. We see --  
2 this is from Dr. Longo's study on the left and your study on  
3 the right.

4 A. Right.

5 Q. How does this strike you as an industrial hygienist based  
6 on the data you have seen in Dr. Longo's study?

7 A. It doesn't make sense to me in that what you're seeing on  
8 the left, the airborne concentrations are in the same range as  
9 the airborne concentrations in the activities that you see on  
10 the right. That just doesn't make sense to me.

11 Q. And on both of these, your study was filmed under ambient  
12 light. No special lighting there, correct?

13 A. That's correct.

14 Q. And what we see on the left, is that with the Tyndall  
15 lighting or is that just ambient lighting?

16 A. That's ambient lighting.

17 Q. So you've looked at these studies in detail. Have you  
18 identified criticisms or issues with those studies?

19 A. Yes. It's really more how can there be such a difference  
20 between the published literature on gaskets and what Dr. Longo  
21 found, and there are actually quite a number of flaws with Dr.  
22 Longo's approach.

23 Q. All right. And so these are issues or flaws that you  
24 have identified with these studies?

25 A. Yes.

1 Q. We're obviously not going to go through all of them.

2 We're going to hit just a couple of them. But the first one  
3 you have listed there is "study design."

4 A. Yes.

5 Q. Can you tell us what your concern, the criticism that you  
6 would have is in that regard.

7 A. Sure. The -- in setting up an exposure assessment, how  
8 the study is designed is critical. As I explained, it's about  
9 understanding what people do; watching what people do;  
10 interviewing them; watching what they do, in fact, as opposed  
11 to what they say they're going to do; understanding how to  
12 conduct field studies. None of those, as it turns out, are  
13 experiences that Dr. Longo has.

14 So simply from the standpoint of study design, their  
15 approach is wrong.

16 Q. All right. You have "obtained one of the highest samples  
17 during a rest period."

18 A. Yes.

19 Q. Can you tell us about that.

20 A. Yes. In one of the studies there was some confusion,  
21 from what I can tell, about sampling pumps not being on and  
22 this is reported in the report. But then the highest  
23 concentration that's reported is in a period -- during a rest  
24 period when there is no activity going on. And that just  
25 doesn't make sense.

1 Q. All right. You also have "improper tools and  
2 nonrepresentative work practices." Have you -- can you tell  
3 us what you mean in that regard.

4 A. Sure. For example, when using a flat blade scraper or  
5 something like a wood chisel to remove a gasket, the objective  
6 is to get under the edge of the gasket and peel it off. And  
7 there -- some of the testing that Dr. Longo used, the tool is  
8 being used to stab at and chop at the gasket material. That's  
9 just not a technique that's used.

10 The nonrepresentative work practices, similarly the --  
11 what you see people do in the field and how they remove  
12 gaskets is not what is being shown in the work done by Dr.  
13 Longo.

14 Q. So there are a number of criticisms about the methodology  
15 that he claimed to use, but then also things you've identified  
16 where he did not follow the accepted methodology.

17 A. That is correct.

18 Q. Have you actually published on this issue or have you  
19 written a letter that has been published with respect to the  
20 criticisms that you have of these studies?

21 A. Yes. It's actually the other way around. Dr. Longo  
22 wrote to the editor regarding my 2002 manuscript where he was  
23 critical of what I had done and I responded, which is  
24 typically the way that an editor handles this. So mine was a  
25 response to the letter to the editor that Dr. Longo wrote.

1 Q. And have we displayed the portion of the letter that  
2 explains the concerns that you have with Dr. Longo's paper?

3 A. Yes.

4 Q. So you mentioned the rest period sample results that was  
5 high; is that right?

6 A. Yes.

7 Q. Is that from Gasket Study V?

8 A. It is.

9 Q. And what's reported is 36 fibers per CC.

10 A. Right. This is -- this is the reported airborne  
11 concentration, 36.85 fibers per CC during a period of time  
12 when there is no work activity going on and it's a rest  
13 period.

14 Q. All right. Can you see -- tell us what we're seeing  
15 here.

16 A. Yes. This is where -- during the -- during the  
17 activities, there was a failure to turn on the pumps and  
18 they're just now realizing it so they're turning on the pumps  
19 after some period of activity. And there's confusion about  
20 whether the pumps were on or whether the pumps were off. Were  
21 samples being collected; were samples not being collected.  
22 And it's following this period of time that the sample of 36.8  
23 was received.

24 Q. Okay. And that's actually explained here in the report  
25 itself. "The first 15 minute work period, the four personal

1 pumps were not activated during the actual gasket removal  
2 activity. The personal pumps were then activated during the  
3 first rest period."

4 A. That's correct.

5 Q. And that's the clip of the video that we just saw.

6 A. That's correct.

7 Q. Now, with respect to the published paper, can you  
8 identify for us some of the criticisms that you raised in your  
9 letter that was published.

10 A. Well, one of the points that was interesting is that the  
11 background before the work ever began was in excess of the  
12 current allowable limit which indicates that there is a  
13 contamination problem. Whether it is related to the  
14 analytical approach or whether it's related to the conditions  
15 under which the work was being conducted is not clear. But  
16 it's just indicative of the challenges in trying to understand  
17 what is meant by the data that's presented in the literature  
18 by Dr. Longo.

19 Q. It says, "Study III, power wire brushing in background."  
20 The range is .09 to .12 fibers per CC and the average was  
21 0.11.

22 A. That's correct.

23 Q. What is the OSHA limit when this study was done in the  
24 early 2000s?

25 A. 0.1.

1 Q. And so before the studies started the background level is  
2 above the OSHA permissible exposure.

3 A. That's what's being reported, yes.

4 Q. You talked about the work practices being  
5 non-representative. Can you tell us what you see here.

6 A. What we're seeing is someone taking a stiff putty knife  
7 or a tool that would be used to get under the gasket and  
8 simply chopping at the surface of the gasket. And then a high  
9 speed, higher rpm grinder is being used aggressively on the  
10 flange and to a point of aggressiveness that it actually burns  
11 out the grinder. And that's what we're seeing here is the  
12 tool itself has been destroyed.

13 Q. So the chopping of the gasket -- you said you got under  
14 the gasket. Is that what you saw in the studies where you had  
15 watched pipefitters remove gaskets?

16 A. That's what I've seen pipefitters do in removal of the  
17 gasket is remove the parent gasket and then the technique of  
18 polishing the surface of the flange is done with different  
19 tools and different methods.

20 Q. All right. You also, I understand, noticed something  
21 else about Gasket Study V; is that correct?

22 A. That's correct.

23 Q. So why do we have a picture here?

24 A. Well, this is just to show you what to look for in the  
25 video.

1 This is what's called a Servo drive pump. It's the type  
2 that Dr. Longo was using in the -- in his testing. This is  
3 where you hook the tube to connect to the cassette. This is a  
4 calibrated device. There's a float here. It's called a  
5 rotometer. And during a steady sample collection, that float  
6 should stay at a certain position. There is a fault indicator  
7 up here that will flash red if it is malfunctioning.

8 And you can see in this next video that the pump is  
9 malfunctioning. This is checking the pump. And what you see  
10 is the light is flashing and the rotometer is bouncing and  
11 this pump is faulting. That's not reported in the report.  
12 Nor is there a -- yet there is a sample result associated with  
13 this pump.

14 Q. Okay. And so the equipment was malfunctioning. I mean,  
15 that can happen, can't it?

16 A. Sure, but you would typically catch that by checking and  
17 then you would either flag that sample as questionable or you  
18 would note it in the report.

19 Q. You mentioned a high speed grinder. This is titled  
20 "11,000 rpm grinder and brass wire brush."

21 A. Right.

22 Q. What's significant about this to you?

23 A. Well, when I looked at the reference information, this  
24 particular grinder is rated 11,000 rpm. And the brass wire  
25 brush itself is rated at a maximum of 7,000 rpm.



1           So this tool is being used in combination with a brush  
2 which is not intended for the tool and well above its rated  
3 rpm.

4 Q.    So the catalog number is 77735 and the maximum safe speed  
5 is 7,000 rpm's.

6 A.    Correct.

7 Q.    Is this a multi-speed grinder or is it just on/off and  
8 11,000 rpm's or zero?

9 A.    It's on/off to the best of my knowledge.

10 Q.    Were these grinders, to your knowledge, available in the  
11 1960s?

12 A.    No, they were not. This is a more modern tool. The  
13 historic grinders that one would think that was analogous to  
14 this are considerably larger and considerably bulkier.

15 Q.    So Dr. Longo also identified these tools in his report as  
16 typical gasket removal tools or typical tools. Is that your  
17 understanding of these tools, at least historically being  
18 used -- historically being typical?

19 A.    I think it's -- I think it's a bit of understanding the  
20 language itself. They are -- they are tools that would be  
21 typical for a pipefitter to have today. They wouldn't  
22 necessarily be typical for the removal of a gasket off of a  
23 flange surface. They would -- an aggressive tool like the  
24 power grinder might be used to remove rust and clean up bolts  
25 and things like that, but the -- a putty knife would be used

1 to get under the edge of a gasket and peel it off and a high  
2 angle wire brush would be used to clean off rust and clean off  
3 paint and remove residual gasket once the parent is off.

4 Q. I noted that this grinder appears to have a guard on it;  
5 is that correct?

6 A. It does.

7 Q. When we see video in a second of the grinder, let's look  
8 for that. It looks like when he's displayed the tool here,  
9 the guard has been taken off.

10 A. That's right. And you'll see that in the videos that the  
11 guard is not on the tool.

12 Q. Is it standard to take off guards like that?

13 A. No.

14 Q. Mr. Boelter, the wire wheel that is identified there in  
15 the bottom, do you know what material that's made of?

16 A. That's made of a hard steel. A high tensile strength  
17 steel.

18 Q. Dr. Longo made this statement in his report on page 36.

19 "A simple rule used in material science demonstrates why these  
20 Garlock experts are wrong when they say workers would never  
21 use wire brushes to remove the old gaskets because of the  
22 potential damage to the steel flanges. This rule is that a  
23 softer material cannot scratch a harder material. This allows  
24 the use of a wire brush to remove the old gasket without  
25 damaging the steel surface."

1 Now, first, have you ever said that wire brushes wouldn't  
2 be used to remove gaskets?

3 A. No. It's common to see someone using a wire brush to  
4 polish the flange surface once the gasket has been removed to  
5 remove residue or to clean up the surface. That's typical.

6 Q. Okay. Have you evaluated whether his tools when used on  
7 different flanges could potentially damage a flange?

8 A. I did, yes.

9 Q. Okay. This is a carbon steel -- it looks like it says  
10 carbon steel wheel.

11 A. That's right.

12 Q. And --

13 A. What that says is it's a cable wire. What that means is  
14 they have twisted the carbon steel to create a very aggressive  
15 tool.

16 Q. And it looks like -- this is a photograph from one of his  
17 studies?

18 A. That's right. There's several things you can see. One  
19 is sparks are flying. The tool is being used and there is no  
20 guard on the tool.

21 Q. What's wrong with sparks flying?

22 A. Well, that indicates -- first of all, it's an aggressive  
23 approach. But you would only get sparks flying by a steel  
24 against steel or some hard material against hard material.  
25 You can't get sparks flying off of a nonferrous metal.

1 Q. Is it common to have sparks flying in refineries or other  
2 industrial facilities?

3 A. No. That would be classified as a hot work practice and  
4 would require a hot work permit to do that.

5 Q. Okay. What's significant about this picture to you?  
6 This is from one of his -- his most recent study on gaskets.

7 A. Right. The -- well, first of all, it's clearly in the  
8 brass family of fittings.

9 Q. So it appears to be a brass or a bronze valve.

10 A. Yeah, bronze is an alloy of brass so it's in the brass  
11 family.

12 Q. Okay. Now, if we go back to his statement, he's saying  
13 that the steel -- the wire brush to remove the old gasket  
14 without damaging the steel flange surface. So at least in his  
15 most recent study, not all of his flanges were steel, correct?

16 A. No, that's correct. Not all of them were steel.

17 Q. And is brass or bronze harder or softer than steel,  
18 carbon steel?

19 A. Well, the hierarchy would be brass, bronze, steel,  
20 stainless. Depends upon the alloy, depends upon the content  
21 of the different metals in the fitting itself.

22 Q. Captain Wasson showed us a couple days ago the different  
23 valves that would be used on lines where compressed asbestos  
24 sheets would be used and looks like most of these are going to  
25 involve what he called yellow metals: Brass, bronze, and not

1 necessarily steel.

2 A. That's correct.

3 Q. Is that your experience, not necessarily maritime  
4 situations, but in industry?

5 A. Well, the metal is going to be selected for the process.  
6 What's going through the pipes, the temperatures, the  
7 pressures. The metallurgy will depend upon what's required.  
8 But it's common to see brass and bronze on naval vessels and  
9 it depends upon the application what metal is there.

10 Q. We asked you to evaluate that statement that we saw  
11 earlier by Dr. Longo. Did you have an opportunity to purchase  
12 flanges and the tools that Dr. Longo used to evaluate whether  
13 you could, in fact, damage flange faces using the tools that  
14 he was using?

15 A. I did, yes.

16 Q. Okay. Can you tell us what we're seeing here.

17 A. What we're doing is we're starting out with the  
18 mechanic's rule to show that it's flat with a back light. And  
19 if there were any imperfections across this machine surface,  
20 you would see light shining through.

21 So what I did -- this is me on the right. And what I'm  
22 doing is mimicking what I observed in the video in terms of  
23 the activities, the pressures, the angles of the same tool at  
24 the same rpm with the same type of wire wheel on it. And then  
25 I'm going to take a look at what the condition is of the

1 flange afterward.

2 So now it's the same back light and you can see there is  
3 light coming underneath the mechanic's rule which demonstrates  
4 there is deformity to a previously machined surface.

5 And you can see gouges and streaks from the use of that  
6 aggressive tool on a metal surface.

7 Q. So that's a brass flange. A bronze flange, did you also  
8 do the same type of operation on a bronze flange?

9 A. Right, I did this on a variety of metals that were mil  
10 spec'd metals and there was damage to every one of these  
11 surfaces with the use of that tool.

12 Q. It looks like in part of it there we see the phonographic  
13 finish on the flange face.

14 A. Right. These flanges had a -- it's often referred to as  
15 a phonographic finish. These are concentric rings to provide  
16 a better grip into the gasket. And you can see that where the  
17 tool was used, these rings have been worn away and it creates  
18 a deformity to the trueness of the surface.

19 Q. And then on the bronze flange, did you see similar  
20 damage?

21 A. Right. Again, this is a back light underneath the  
22 mechanic's rule that is -- that otherwise would have been flat  
23 before the wire brush was taken to it.

24 Q. In addition to the yellow metal flanges, did you also  
25 evaluate what would happen on a carbon steel flange?

1 A. Right. This is carbon steel. You can see the damage  
2 here in comparison to where the tool had not been used.

3 Q. I want to return to this photograph. I believe we showed  
4 it a little earlier in your presentation. This was an  
5 illustration of insulated valves and pipes on navy ships; is  
6 that correct?

7 A. Yes.

8 Q. This was on the Lexington.

9 A. It is.

10 Q. I believe Dr. Longo, we covered this before, had said  
11 that when he was on the Lexington, he didn't see any valves  
12 that were covered with hard insulation like was removed in the  
13 pipefitter exposure assessment that you did.

14 You were on the Lexington, I guess, in 2003; is that  
15 correct?

16 A. That is correct.

17 Q. And do we see valves that are insulated with the hard  
18 insulation?

19 A. Right. That's what I have shown here with the circles  
20 is -- I had been on this ship ten years ago. And it's been my  
21 experience on ships is that there is a mixture of hard  
22 finishes and the softer laggings. And it clearly is easy to  
23 see that there are hard finished insulation systems on these  
24 naval vessels.

25 Q. Mr. Boelter, the -- you can step back.

1 (Witness resumed the witness stand.)

2 Q. You understood that when you did your pipefitter exposure  
3 assessment, that it was the type of study that might be relied  
4 upon to assess the current claimants' and future claimants'  
5 potential asbestos exposures that they might have when they  
6 did gasket work; is that correct?

7 A. Yes.

8 Q. And you've done that for gaskets and you've done that now  
9 for insulation, potential insulation exposures as well.

10 A. Yes.

11 Q. Is that the type of assessment, retrospective -- or is  
12 that the type of exposure assessment that can be used in a  
13 retrospective exposure assessment?

14 A. Yes, it is.

15 MR. HARRIS: Thank you, Mr. Boelter.

16 I pass the witness.

17 THE COURT: Cross examination.

18 CROSS EXAMINATION

19 BY MR. FROST:

20 Q. Good afternoon, Mr. Boelter. My name is Scott Frost, and  
21 I'll be asking questions to begin with.

22 First I want to talk to you a little bit about your  
23 litigation and then we'll talk about some of your studies.

24 You began in asbestos litigation in 1976, correct?

25 A. That's the first time I testified with regard to an



1 asbestos matter in litigation, yes.

2 Q. And prior to your current company that you work for, you  
3 had your own company, correct?

4 A. Yes.

5 Q. And that first company that you had, that company was  
6 Boelter and Associates and then it became Boelter Yates,  
7 correct?

8 A. There was some iterations to it, but there were -- there  
9 was a name change, yes. But it was the same company.

10 Q. Basically, your same company. For how many years did you  
11 own that company?

12 A. I was -- I was an owner for 22 years.

13 Q. And over that 22 years, you billed about a hundred  
14 million dollars, correct?

15 A. That's correct for total billings, yes.

16 Q. Now, part of that is litigation-related work, correct?

17 A. Yes.

18 Q. And that litigation work was at least \$14 million as of  
19 2009, correct?

20 A. It could be, I don't know.

21 Q. Do you remember testifying in the past about it  
22 being 14 -- about \$14 million?

23 A. No, I don't. That doesn't sound unreasonable to me.

24 Q. So you wouldn't disagree with me. Do you want me to pull  
25 it up or do you and I agree?

1 A. No, I don't disagree.

2 Q. And part of that litigation is what you did in asbestos  
3 litigation, correct?

4 A. Yes.

5 Q. And that -- just for Boelter and Associates and Boelter  
6 and Yates over the time period of your own company, that was  
7 at least four to five million dollars that you billed just in  
8 asbestos litigation, correct?

9 A. I'm sorry, ask your question again.

10 Q. For your company, before you sold it, you had billed in  
11 asbestos litigation alone four to five million dollars,  
12 correct?

13 A. I would expect that, yes.

14 Q. Okay. It could be even more.

15 A. I don't think so, but it would be in that range.

16 Q. Okay. Now, when you sold your company, you continued to  
17 work for asbestos defendants, correct?

18 A. There were -- they were defendants in asbestos  
19 litigation, some of them, yes.

20 Q. And you've testified for Garlock in the past, correct?

21 A. Correct.

22 Q. And I'm not sure you can see this, but the interrogatory  
23 answers in this case list a number of cases that you've  
24 testified for Garlock in. Have you seen that list, sir?

25 A. No, I have not.

1 Q. So you weren't provided that list even though it was  
2 provided in discovery?

3 A. I've not seen this list, no.

4 Q. Okay. And I don't want you to count it up right now, but  
5 would it surprise you that you have been retained by Garlock,  
6 at least as of these interrogatories, in at least over 50  
7 cases and it might even be more cases, correct?

8 A. It wouldn't be surprising to me that I have been engaged  
9 to answer questions on behalf of Garlock regarding that number  
10 of cases, no.

11 Q. And in fact, I think you've testified in the past that  
12 you believe you've been retained by Garlock in at least a  
13 hundred cases, correct?

14 A. Well, I've been engaged by Garlock on a number of matters  
15 that involved a number of cases, sure.

16 Q. It wouldn't surprise you it's probably around a hundred  
17 or so.

18 A. I haven't kept track.

19 Q. Now, when you were retained by Garlock, are those  
20 typically in mesothelioma cases?

21 A. I don't know that I could answer that question actually.

22 Q. Well, I mean, you know the difference between asbestosis  
23 and lung cancer cases, correct?

24 A. Yes, but I don't remember what the claim of injury was.

25 Q. Would you agree with me that typically you're not

1   testifying and you haven't testified at trial in any  
2   asbestosis cases, correct?

3   A.   Not involving Garlock, no.

4   Q.   Okay. And you've never testified as far as you can  
5   remember in a case against Garlock at trial in a lung cancer  
6   case, correct?

7   A.   I don't recall. I'm not saying that I haven't. I don't  
8   recall.

9   Q.   Would it be fair to say that the times that you have  
10   testified at trial for Garlock have been mesothelioma cases,  
11   correct?

12   A.   I don't actually remember, no. It very well could be the  
13   case. I don't really remember the nature of the claim of  
14   injury.

15   Q.   Okay. It makes sense because mesothelioma cases are  
16   traditionally more worked up and more experts are retained,  
17   correct?

18   A.   Well, mesothelioma cases are rare and so I don't really  
19   know what the mix was of the claims of injuries.

20   Q.   Now, even though mesothelioma cases are rare, you have  
21   testified for a number of companies in the past in asbestos  
22   litigation, correct?

23   A.   That's correct.

24   Q.   And I have Caterpillar up there, Congoleum, N.L.  
25   Industries, Dana Victor, John Crane, Babcock and Wilcox,

1 Anchor Packing, Goulds Pumps, Crane Co, American Standard,  
2 Garlock obviously. You've testified in court on behalf of  
3 those companies, haven't you?

4 A. No.

5 Q. Which companies have you not testified?

6 A. I have not testified in court with -- on behalf of N.L.  
7 Industries, John Crane, Babcock and Wilcox, Goulds, American  
8 Standard.

9 The ones I've testified in court have been for Crane Co  
10 and Dana Victor. And that's it aside from Garlock.

11 Q. Okay. Now, those other companies I have listed up there,  
12 you have been retained and given depositions, correct?

13 A. I've never been deposed with regard to N.L. Industries  
14 the best of my knowledge.

15 I was deposed once in a John Crane case.

16 I don't -- I've never done any asbestos-related  
17 litigation work involving Babcock and Wilcox.

18 Some of these are projects that I conducted for which I  
19 have never been deposed.

20 Q. Would it be safe you've done work for them concerning  
21 asbestos issues for all of those companies up there?

22 A. No, I don't think that would be safe to say. Some of  
23 them were non-asbestos.

24 Q. Caterpillar, you did a study for them concerning  
25 asbestos?

1 A. That's right. That was one of the published studies we  
2 talked about.

3 Q. Congoleum, you did work for them?

4 A. I did studies for them as a consultant.

5 Q. N.L. Industries, you've been hired as a consultant for  
6 them in asbestos cases.

7 A. I did consulting work for them, yes.

8 Q. Okay. Dana Victor, you've actually testified for them at  
9 trial?

10 A. I just said that, yes.

11 Q. John Crane, you've been retained in asbestos cases,  
12 correct?

13 A. I was presented once by them in a deposition.

14 Q. Okay. Babcock and Wilcox, you've been retained as either  
15 a consulting expert in the past, right, in asbestos?

16 A. That's news to me. If you've got some news to that, I'd  
17 like to see it. I'm not aware of it.

18 MR. FROST: Can you pull it up.

19 Q. Anchor Packing. You've been retained by them in the  
20 past, right?

21 A. I think so. I think so.

22 Q. Goulds Pumps, you've been retained by them in asbestos  
23 cases, correct?

24 A. I've done some consulting work with them. I don't know  
25 that I've ever been presented at deposition. I know I haven't

1 been presented at trial by them.

2 Q. Okay. So you've been hired by them in asbestos cases,  
3 Goulds Pumps, correct?

4 A. I don't know that I would say in asbestos cases. I have  
5 worked with a number of people over the years involving  
6 matters that involved asbestos that may or may not be in  
7 litigation.

8 Q. Okay. But -- and I don't want to belabor the point. The  
9 point is is that Goulds Pumps has hired you in the context of  
10 asbestos litigation. Whether you've actually testified at  
11 trial or at deposition, you have been hired by Goulds Pumps as  
12 an expert witness or as a consultant, correct?

13 A. I think that's correct.

14 Q. Okay. I mean, I didn't just come up with these names.  
15 American Standard --

16 A. Well, I don't know where you got Babcock and Wilcox.

17 Q. Okay. Well, we're going to pull that up.

18 MR. FROST: Can we go ahead and pull that up.

19 Q. Sir, this is trial testimony from the *Norris* case. Do  
20 you remember testifying in Los Angeles, California, in the  
21 *Norris* case?

22 A. I do. And this is what I was thinking about regarding  
23 Babcock and Wilcox. This has to do with noise and metal work  
24 in fluids at a seamless pipe manufacturing facility had  
25 nothing to do with asbestos.

1 Q. Okay. So did you work with Babcock and Wilcox, just not  
2 concerning asbestos now?

3 A. Well, sure. I've worked for hundreds and hundreds of  
4 companies that may be defendants in asbestos litigation.  
5 Doesn't mean I did work regarding asbestos litigation or  
6 asbestos.

7 Q. And American Standard, you've been retained as an expert  
8 concerning asbestos at American Standard, correct?

9 A. I've been presented at deposition by them, yes.

10 Q. Okay. So when it comes down to it, really that list, the  
11 only thing that you're disagreeing with now is Babcock and  
12 Wilcox because you've been retained by them, just you don't  
13 think it was in context with asbestos; is that correct, sir?

14 A. I wasn't retained by them. I did a project for them 30  
15 years ago.

16 Q. Okay. But all the other companies I've listed up there,  
17 you've either been retained, testified at trial or at  
18 deposition or been a consulting expert for other than Babcock  
19 and Wilcox, correct, sir?

20 A. Yes, that's what I said.

21 Q. Okay. Now, you've also done consulting work for other  
22 companies in asbestos litigation and you don't disclose that,  
23 correct?

24 A. Well, as a matter of ethics as a hygienist, as a matter  
25 of contract, and as a matter of what I think is appropriate



1 behavior, I talk about those matters which I am disclosed to  
2 talk about and I don't talk about other matters for which I'm  
3 not authorized to disclose.

4 Q. And so there could be a whole nother list of defendants  
5 in asbestos litigation who you've either consulted with or  
6 done work for that you're not able to disclose to us, correct?

7 A. I wouldn't even begin to know how to answer that question  
8 simply because as I said earlier, I've done more than ten  
9 thousand projects and there are hundreds of defendants in  
10 asbestos litigation and I may have done work with them that  
11 has nothing to do with asbestos litigation. But the fact is,  
12 yeah, I've done work with many, many different companies.

13 Q. And in fact, what you told us in the past is that you  
14 sell your time, correct?

15 A. That's what I do, yes.

16 Q. And part of the selling your time is you haven't  
17 testified in a case at trial or by deposition for a single  
18 individual harmed by asbestos since 1989, correct?

19 A. That's fair to say. The reality is that the only people  
20 I do work with involving asbestos litigation from a defense  
21 standpoint are those that either manufacture encapsulated  
22 material products for which I do not believe there is any harm  
23 caused or that use such a product in such a device, such as a  
24 Caterpillar engine, for which I do not believe there is any  
25 harm caused. I'd be happy to work with plaintiffs on matters

1 that involve something other than friable materials --  
2 non-friable materials, I'm sorry.

3 Q. So the answer to my question is yes, you have not  
4 testified since 1999 for any individual that's been injured in  
5 an asbestos case, correct, sir?

6 A. I haven't been asked to, that's correct.

7 Q. So that means you haven't. Thank you.

8 Now, you have -- I want to talk a little bit about your  
9 qualifications and then we'll go into the studies a little  
10 bit.

11 You're not a doctor, correct?

12 A. That's correct.

13 Q. And you don't even have an advanced degree, correct?

14 A. That's correct.

15 Q. And you're not a naval engineer.

16 A. That's correct.

17 Q. And you're not -- never been a machinist's mate.

18 A. Correct.

19 Q. Never served in the United States Navy.

20 A. Correct.

21 Q. Never were a pipefitter.

22 A. Correct.

23 Q. And you have no formal training on how to work with  
24 flanges, correct?

25 A. I'm not sure that's correct. I don't know what you mean

1 by formal training. I certainly have training with regard to  
2 work on flanges and what people do with them.

3 Q. Well, in fact, what your training is is that your family  
4 used to be plumbers and you used to hang around your family,  
5 correct?

6 A. No, I don't think that's a fair characterization either.

7 Q. Okay. You would agree with me, sir, that you have never  
8 been hired for money to be a pipefitter, correct?

9 A. That is correct.

10 Q. You've never been a member of the pipefitter union.

11 A. That's correct.

12 Q. You've never been a member of the insulation union.

13 A. That is correct.

14 Q. You've never been a member of any union that deals with  
15 asbestos and thermal insulation or asbestos and gaskets,  
16 correct?

17 A. That's correct.

18 Q. Now, you've given a number of presentations over the  
19 years, right?

20 A. That's right.

21 Q. And in fact, when we have this blue outline here, these  
22 are from power points that you've actually given to people.  
23 You remember this, right?

24 A. Well, I remember this particular slide being used in  
25 several presentations I've given, yes. I don't remember which

1 specific one it's out of.

2 Q. Yeah, well, this is your slide, right?

3 A. It looks like my slide, yes.

4 Q. Okay. And what I want to do is I do want to keep it  
5 simple just like you talked about in your slide so I want to  
6 talk about what you've published in the literature. You  
7 remember publishing in 1989 in a journal called Asbestos  
8 Issues an article, correct?

9 A. Yes.

10 Q. And it's called "Air Sampling and Monitoring," correct?

11 A. Yes.

12 Q. And that's you right there.

13 A. Yes.

14 Q. And you went through a number of -- and it may be hard to  
15 read. It's not the best copy in the world. But you talk  
16 about asbestos and what's going on in the context of  
17 buildings, correct?

18 A. Are you asking me what the article is about? I'm not  
19 sure what you're asking me.

20 Q. Yes, that's what the article is generally about, right?  
21 It's asbestos in buildings and how to deal with those  
22 problems.

23 A. No, the article is the title: "Air Sampling and  
24 Monitoring." That's what this is about.

25 Q. Did it talk about where you can commonly find asbestos in

1 buildings and the types of materials in buildings that may  
2 contain asbestos?

3 A. Sure. That's background -- it's a backdrop to what the  
4 article is about which is air sampling and monitoring.

5 Q. Okay. And so let's look at your article. Hopefully you  
6 can read that. Can you read it on your screen?

7 A. I can.

8 Q. Okay. It says, "The three most common types of asbestos  
9 found in buildings are chrysotile, amosite and crocidolite,  
10 with chrysotile comprising about 90 percent of all asbestos  
11 used."

12 Now, you agree with that, correct, sir?

13 A. I cited to a source from which I got that information. I  
14 don't know that I agree with it, but it's an often cited  
15 reference.

16 Q. Okay. So you published this paper yourself, right?

17 A. That's correct.

18 Q. And you wrote it. No one ghost wrote it for you.

19 A. It's my article, yes.

20 Q. Okay. So right now you're not sure -- you don't agree  
21 with your own article?

22 A. Well, what I agree with is I cited to a source for that  
23 statement.

24 Q. Okay. So do you agree now as we sit here today that  
25 chrysotile comprised about 90 percent of all the asbestos used

1 in building materials?

2 A. What I agree with is that is an often referenced amount  
3 of chrysotile. I don't know whether it is correct or not  
4 correct.

5 Q. Okay. So you're putting out information that you don't  
6 know if it's correct or not correct?

7 A. I cited to a source for the information.

8 Q. Now, the other thing you talk about is you list different  
9 materials and you say, "And miscellaneous materials which  
10 include a variety of products such as ceiling and floor tiles,  
11 wall boards and gaskets."

12 So in this article when you talk about miscellaneous  
13 materials, you're talking about things like ceiling and floor  
14 tiles, wall boards, and gaskets, correct, sir?

15 A. Yes. This is the classification that EPA uses.

16 Q. Right. And so you then start talking about different  
17 techniques, but then you also talk about how individuals can  
18 be exposed to asbestos. Do you remember that, sir?

19 A. I haven't read this in a while. Do you want me to read  
20 it? I'm not sure what you're asking me about.

21 Q. Well, we'll read along together. You can see that,  
22 though, correct?

23 A. Yes.

24 Q. It says, "Each asbestos fiber is a bundle of many small  
25 fibers. Upon disturbance, these microscopic fibers remain

1 suspended in the air for extended periods of time and can be  
2 carried to locations well removed from the source."

3 Do you agree with that, sir?

4 A. I agree that in 1989 that was the prevailing thought. I  
5 think differently today.

6 Q. Okay. So at least right when you published this and you  
7 made a citation, you agreed that microscopic fibers remain  
8 suspended in the air for extended periods of time and can be  
9 carried to locations well removed from the source. You wrote  
10 that and published that, but you now disagree with that?

11 A. The purpose of this article was about air monitoring.  
12 This is a backdrop to the purpose of air monitoring and how to  
13 set up strategies for air monitoring. The whole concept here  
14 is there are asbestos-containing materials used in buildings  
15 and they may be disturbed and in that disturbance may cause  
16 fiber release and you need to do air monitoring to  
17 characterize those exposures.

18 Q. Right. And some of the materials that can be disturbed  
19 are ceiling and floor tiles, wall boards, and gaskets,  
20 correct, sir?

21 A. Well, sure. Of course. That's the EPA classification  
22 system. But the EPA also regulates friable materials.

23 Q. And so let's continue on with what you wrote and see if  
24 you agree with it now or disagree.

25 It says, "After settling on surfaces, the fibers can be

1 stirred into the air with local movement. Disturbances that  
2 can cause fiber release from friable ACM include vibration  
3 from machinery or equipment, maintenance activity, product  
4 deterioration, ventilation systems, water damage, natural  
5 building movement and contact by building occupants."

6 Sir, do you still agree with that?

7 A. Not really, no. The -- I agree that they can cause those  
8 types of disturbance -- I mean, disturbances can cause fiber  
9 release, I agree with that. And these are examples of  
10 intuitive sources that can cause disturbances.

11 Whether or not they result in significant airborne  
12 concentrations is a matter about which I have done  
13 considerably more studies than I had in 1989 and I have come  
14 to an appreciation of greater depth than what is apparent from  
15 this quick read.

16 Q. Okay. So you disagree with this portion of the paper  
17 that you published, correct?

18 A. It depends.

19 Q. Well, in regards to that portion you disagree.

20 A. Well, what I disagree with is that this characterization  
21 applies to miscellaneous materials or to non-friable  
22 materials. I would disagree with that.

23 Q. Okay. You would agree with me, sir, that no where in  
24 here do you draw that distinction, correct?

25 A. That's correct.



1 Q. Okay. Now, you also talk about in this article, "While  
2 asbestos and lung cancer have been correlated with chronic  
3 occupational exposure levels (two to 15 fibers per cubic  
4 centimeter)," and you have a cite, "mesothelioma may result  
5 from a much lower exposure."

6 Do you still agree with that, sir?

7 A. To some degree, yes. What we've also come to appreciate  
8 is fiber type makes a significant difference.

9 Q. Now, sir, you would agree with me that this debate about  
10 fiber type, that's not something new, correct? I mean, it  
11 began back with Dr. Selikoff's conference in 1964, didn't it?

12 A. I'm not sure what you're referring to.

13 Q. Okay. You're not aware that in the 1964 Selikoff  
14 conference, there were folks that were saying -- particularly  
15 folks that were related to the Quebec asbestos mining  
16 industry, saying that maybe chrysotile wasn't as toxic as  
17 amphiboles. You don't know anything about that?

18 A. No, I'm aware of that --

19 Q. Okay.

20 A. -- characterization. But since that time there have also  
21 been other -- there's been considerably more studies since  
22 1989 with regard to differences in fiber type and the  
23 potencies.

24 Q. You would agree with me that prior to 1989, this whole  
25 idea of differences in potencies and different fiber types

1 causing mesothelioma, that was in the literature, though,  
2 correct, sir?

3 A. Sure. Well, some of it was. But there -- as I said,  
4 there's been considerably more since then. But during this  
5 period of time, there was also differentiation within the  
6 ACGIH in their TLVs of a different allowable limit based on  
7 fiber type.

8 Q. Sir, there was no difference in 1989 in the OSHA  
9 standards concerning different fiber types, correct, sir?

10 A. OSHA has never differentiated. ACGIH has.

11 Q. And, in fact, the ACGIH today does not differentiate  
12 between fiber type; is that correct, sir?

13 A. That's correct because the level that is adopted today is  
14 the lowest level for the differentiated fiber types in the  
15 '80s.

16 Q. And would you agree with me, sir, that at least in this  
17 article that you wrote in 1989, you believe that mesothelioma  
18 may result from a much lower exposure than that required for  
19 asbestosis and lung cancer, and you did not differentiate  
20 between exposures from thermal insulation and gasket  
21 materials, correct, sir?

22 A. In this manuscript? This manuscript has to do with air  
23 sampling methodologies. This isn't a treatise on toxicology  
24 or on risk.

25 Q. Sir, you -- so is the answer no?

1 A. To which question?

2 Q. So would you agree with me that no where in this paper do  
3 you cite any differences in fiber potencies or claim that  
4 chrysotile or working with gaskets and packing is any  
5 different than working with thermal insulation concerning risk  
6 for mesothelioma.

7 A. I'm pretty confident I didn't say that. But I'm also  
8 pretty confident that it's clear from the manuscript that  
9 there -- that I am talking about differences between friable,  
10 non-friable and the three classifications that EPA has for  
11 thermal system insulation, surfacing materials and  
12 miscellaneous materials, and that inherent in that is a  
13 difference between the potential for fiber release, and  
14 therefore the whole point of the article which is about air  
15 monitoring.

16 Q. I agree, sir. The question to you is very simple. Did  
17 you differentiate for mesothelioma between any of the  
18 different fiber types?

19 A. I don't recall whether I did. I haven't read this in  
20 some time.

21 Q. Would you like to review it?

22 A. Well, I did cite to a footnote. I don't know what that  
23 footnote is.

24 Q. It's not referring to mesothelioma, correct, sir?

25 A. Pardon?

1 A. It's not referring to mesothelioma.

2 Q. I don't know.

3 MR. FROST: Your Honor, may I approach?

4 THE COURT: Yes.

5 Q. Mr. Boelter, I'm going to hand you a copy of your article  
6 so that way maybe we can speed things up.

7 A. Okay.

8 (The document was tendered to the witness.)

9 Q. And that's a copy of your article, correct, sir?

10 A. Yes.

11 Q. Okay. And if you want to look at footnote 7, you can  
12 have at it.

13 A. Right, it's a citation to EPA, 1988 document, Airborne  
14 Asbestos Health Assessment Update.

15 Q. Okay. And would you agree with me that that 1988 EPA  
16 document did not differentiate between fiber type concerning  
17 carcinogenicity?

18 A. That's not a word, but okay.

19 Q. I'm sorry, sir?

20 A. The word you used isn't a word, but okay.

21 Q. Okay. Would you agree with me that in that EPA document  
22 there's no differentiation between fiber type and risk for  
23 mesothelioma?

24 A. I don't know.

25 Q. Okay. Would you agree with me that you did not draw any

1 differentiation in your article between fiber type and  
2 mesothelioma?

3 A. Again, I -- that's not the nature of the article. I  
4 wouldn't be surprised if I didn't, and I don't recall whether  
5 I did.

6 Q. Okay. Good enough.

7 Now, you said you didn't -- this isn't a treatise on  
8 asbestos, but you did talk about things like dose-response.  
9 So this isn't just about air monitoring and the results. I  
10 mean, you've written articles like that where you talk about  
11 air monitoring and say somebody did work practice and I  
12 recorded that work practice and here are my results. You  
13 actually added additional things concerning asbestos and  
14 disease, correct, sir?

15 A. Well, I'm giving -- I'm giving a backdrop to the reason  
16 one does air monitoring, how one goes about doing that.

17 Q. Right. And one of the reasons you need to do air  
18 monitoring, and the quote says there, "Though there appears to  
19 be a dose-response relationship for lung cancer and  
20 asbestosis, this is not apparent for mesothelioma."

21 Do you still agree with that, sir?

22 A. Actually, no.

23 Q. So you disagree now with that statement that you  
24 published.

25 A. That's correct.

1 Q. Okay. And then you said, "Occupational exposure  
2 standards were specifically designed to reduce the occurrence  
3 of asbestosis and lung cancer."

4 And you and I can agree on that, correct?

5 A. The -- you're talking about the OSHA standards?

6 Q. Sir, it's your article. I'm just quoting from it. It  
7 says, "Occupational exposure standards were specifically  
8 designed to reduce the occurrence of asbestosis and lung  
9 cancer." You agree with that, correct?

10 A. Sure.

11 Q. And in fact, all the occupational standards and all the  
12 TLVs and all the things you talked about and Mr. Liukonen  
13 talked about, those were never designed to protect against  
14 mesothelioma, correct, sir?

15 A. Actually, I'm not sure that's true.

16 Q. Do you say that right there, sir? You just say lung  
17 cancer and asbestosis, correct?

18 A. This article is what, 24 years old. I'm saying it now.

19 Q. Okay. I know what you're saying now, sir. We're testing  
20 what you used to say versus what you said now.

21 And you would agree with me that this was -- after you  
22 published this, you have testified almost exclusively -- well,  
23 no, exclusively for defendants in asbestos litigation,  
24 correct?

25 A. Well, I would say well after. But before this I

1 testified on behalf of plaintiffs involving claims of injury  
2 involving friable insulation materials.

3 Q. Now -- so you don't have an opinion whether occupational  
4 standards, the ones that you testified about, the OSHA  
5 standards, the ACGIH standards, whether those were never  
6 intended to apply to mesothelioma. You have no opinion on  
7 that.

8 A. You're talking about historic standards. I would agree  
9 with historic standards, that's correct.

10 Q. Okay. So historic standards were never meant to protect  
11 against mesothelioma, correct?

12 A. In part because it wasn't understood. But the historic  
13 standards were directed at principally asbestosis.

14 Q. So I'm correct, they were never designed to protect  
15 against mesothelioma.

16 A. The historic standards, that's correct.

17 Q. Thank you, sir.

18 Now, you say, "However the National Institute of  
19 Occupational Safety and Health (NIOSH), the EPA, and the  
20 Occupational Safety and Health Administration (OSHA) have  
21 concluded that there is no known threshold of exposure to  
22 asbestos below which there is no health risk."

23 That's what you wrote, correct, sir?

24 A. Well, what I'm citing -- I'm again citing to a reference  
25 and that is what EPA and NIOSH and OSHA have as a policy

1 position.

2 Q. And that policy position as we sit here today in 2013 is  
3 the exact same, correct, sir?

4 A. That is correct.

5 Q. And in fact, if we ask NIOSH, OSHA and EPA, even though  
6 there's been other studies that have come out more recently  
7 since you published this, they have gone back and re-evaluated  
8 that and as we sit here today, OSHA, NIOSH, EPA, IARC, all  
9 have published that there is no safe threshold for exposure  
10 to asbestos, correct?

11 A. That's the policy position, that's correct.

12 Q. And that policy position doesn't matter whether it's  
13 crocidolite, amosite or chrysotile, correct, sir?

14 A. That's correct.

15 Q. Now, another thing you do talk about is using TEM, that's  
16 transmission electron microscopy, correct, sir?

17 A. That's the instrument, yes. That's not a method.

18 Q. Right. True, true. Gotcha. That's a good point.

19 So what this is is -- you testified -- or you talk about  
20 this, is that -- it says, "Another technique, transmission  
21 electron microscopy, TEM, is the method of choice for  
22 determination of asbestos fibers in the air. Fibers are  
23 examined in detail at 20,000x magnification. Through the  
24 examination of each fiber's size, shape, crystalline structure  
25 and chemical composition, an exact identification is made.



1 TEM is the only analysis method that can positively identify  
2 asbestos fibers."

3 You still agree with that today?

4 A. I do.

5 Q. Okay. Now, do you still agree with this statement that  
6 you published in 1989 about there is no safe threshold?

7 A. I -- that's not my statement. I am citing to what OSHA,  
8 EPA, and NIOSH have taken as their policy position. Do I  
9 believe that there is a safe level of exposure? Yes, I do.

10 Q. Okay. So you believe there is a safe level?

11 A. I do, yes.

12 Q. Okay. Have you testified in the past that there was no  
13 safe level of exposure to asbestos?

14 A. That's correct. That's exactly what I was saying here is  
15 that's the policy position of the agencies.

16 Q. Okay. I want to distinguish between the policy statement  
17 and your own opinion. This is a -- the case, the *Weller* case  
18 from 1988. Sir, do you remember testifying in that?

19 A. Yes. Actually, I think I do. I think this is the one I  
20 was referring to prior to the publication of this article on  
21 air sampling and monitoring.

22 Q. Right. And the question to you was, "Did I properly hear  
23 your direct examination where you espoused the view that there  
24 is no safe level of exposure to asbestos?"

25 A. That's correct.

1 Q. And your answer was, "That's correct."

2 So you have testified in the past, sir, have you not,  
3 that there is no safe level of exposure to asbestos?

4 A. That's correct.

5 Q. Okay. And so it wasn't just agencies that you're citing  
6 in your article, that's been your testimony in the past.

7 A. Twenty-five years ago, that's correct.

8 Q. Okay.

9 A. I've learned a lot more since then.

10 Q. Well, let's talk about what folks have learned since  
11 then.

12 You are a member of the AIHA, correct, sir?

13 A. I am, yes.

14 Q. And in fact, you on direct were talking a lot about the  
15 awards that you've won for the AIHA, correct?

16 A. I've been the recipient of awards, yes.

17 Q. And the AIHA, that's actually the publication that you  
18 published one of your studies in, correct?

19 A. The journal is the -- the journal of the AIHA, yes.

20 Q. Right. And so you've published in their journal. You  
21 find them to be authoritative, correct?

22 A. I find them to be the largest organization involving  
23 industrial hygienists, if that's what you mean.

24 Q. Right, they're the largest organization of industrial  
25 hygienists in the United States.

1 A. Of the world actually.

2 Q. Of the world, okay. And you've won their awards. You're  
3 a fellow and you've won -- you hold them in high regard,  
4 right?

5 A. With regard to what?

6 Q. Well, you would agree with me that the AIHA, members of  
7 the AIHA and the AIHA itself have a specific knowledge and  
8 understanding of asbestos and other carcinogens in the  
9 workplace, correct?

10 A. Well, I don't know that I can completely agree with where  
11 you're asking these questions. The AIHA is a forum in which  
12 to exchange professional information and ideas and thoughts.

13 Q. Okay. Well, let's --

14 A. It doesn't mean everyone agrees within the organization  
15 on every topic.

16 Q. Well, that's good. But let's talk about what the AIHA  
17 has actually talked about concerning asbestos. And this is  
18 the AIHA for Job Health and Health Safety on the Care of  
19 Asbestos-Containing Flooring Material.

20 Now, you're familiar with asbestos-containing flooring  
21 material because you talked about that in your original  
22 article, correct sir?

23 A. Not just because of that, but yes, I do know about it.

24 Q. And you actually did some work for Congoleum, right?

25 A. That's correct.

1 Q. And Congoleum made floor tiles.

2 A. Yes, they did.

3 Q. And in fact, they made chrysotile floor tiles.

4 A. Actually, not to the best of my knowledge.

5 Q. Are you aware -- well, put aside whether they made  
6 asbestos-containing floor tiles or not. But you're aware that  
7 chrysotile was the asbestos used in floor tiles, right?

8 A. That's correct.

9 Q. Okay.

10 A. If it was used at all.

11 Q. If it was used at all in floor tiles, it was going to be  
12 chrysotile, correct?

13 A. Yes.

14 Q. Okay. So we're talking -- the AIHA is talking about  
15 flooring material that would have contained chrysotile. And  
16 they say, "What is the hazard?

17 "Inhaling asbestos fibers can also lead to cancer of the  
18 lining of the lungs or the abdomen, which is always fatal."

19 So that's what your organization, the AIHA, is publishing  
20 in conjunction with OSHA concerning flooring material that  
21 contains chrysotile asbestos. Do you see that, sir?

22 A. I don't see the word chrysotile.

23 Q. Well, sir, that's why I asked you the questions about if  
24 we're talking about asbestos-containing flooring material  
25 we're talking about chrysotile; and you agreed with me if it's

1 asbestos-containing flooring material, it only contains  
2 chrysotile, correct?

3 A. Yes.

4 Q. Okay. So even though they don't have the word there, we  
5 all know that if we're talking about flooring material, it's  
6 chrysotile. You would agree with me on that, right?

7 A. Well, I don't -- I don't -- I've never seen this document  
8 before and I don't even know its date so I don't know anything  
9 about this document.

10 Q. Okay. Well, let's just march through it. It's 2010.

11 Now, also the AIHA in conjunction with OSHA talked about  
12 "Why should you care?" Do you see that, sir?

13 MR. FROST: Your Honor, may I approach?

14 THE COURT: Yes.

15 (The document was tendered to the witness.)

16 Q. Mr. Boelter, I've handed you a hard copy. Actually, this  
17 is a document available from the AIHA and OSHA concerning  
18 asbestos-containing floor material. Okay. Do you have a copy  
19 now, sir?

20 A. I do.

21 Q. Okay.

22 MR. HARRIS: Can we have a copy of it, please?

23 (The document was tendered to Mr. Harris.)

24 Q. And what it says is, "Asbestos is a known human  
25 carcinogen."

1 And again, we're talking about in the context of  
2 asbestos-containing flooring material that you and I have  
3 agreed is chrysotile.

4 It says, "Asbestos is a known human carcinogen with no  
5 known safe threshold of exposure." Do you see that, sir?

6 A. I do.

7 Q. And you disagree with that, correct, sir?

8 A. I do.

9 Q. So even though you have published with the AIHA and  
10 you've received their awards, you just disagree with this  
11 organization and OSHA when they publish things like there is  
12 no safe level of exposure, and you disagree with your own  
13 publication where you said it in the past, correct?

14 A. What I'm saying -- I'm not sure what your question is.  
15 What I'm saying today is that there is a known safe level of  
16 exposure to asbestos.

17 Q. And can you name me a single government agency or  
18 international agency that has published that there is a known  
19 safe level of exposure to asbestos?

20 A. Sure.

21 Q. Who?

22 A. The OSHA themselves have a PEL that's been in place for  
23 20 years. ACGIH has had TLVs in place for 50 or 60 years.  
24 They establish levels and those are what are called allowable  
25 levels. They are, in essence, what it means to have a safe

1 level of exposure --

2 Q. Sir --

3 A. -- for a working lifetime.

4 Q. And you can try to turn it around the way you want to,  
5 but would you agree with me that if I pull up OSHA  
6 publications and we talk about AIHA, and this is a joint  
7 statement with OSHA, what OSHA actually says is that there is  
8 no known safe level of exposure but they have established  
9 permissible exposure levels but those permissible exposure  
10 levels are not to protect against diseases like mesothelioma,  
11 correct?

12 A. No, I don't agree with you.

13 Q. On which part?

14 A. Practically anything that you just asked in that  
15 particular question. Clearly these are safe levels. They're  
16 published. If they were unsafe levels, OSHA has the authority  
17 to change them.

18 Q. Well, actually -- and I don't want to get into a debate  
19 about this. Would you agree with me that OSHA has published  
20 and publishes today -- if I went on OSHA, went on their  
21 website and typed in asbestos, I would find this same  
22 language, "Asbestos is a known human carcinogen with no known  
23 safe threshold of exposure."

24 A. Sure. And they come to this conclusion because of the  
25 linear model that they use in developing a standard, and I'd

1 be happy to go into that if you like. But the point is if, in  
2 fact, OSHA were saying because there is no known safe level of  
3 exposure, this published allowable limit is unsafe, they can  
4 change it.

5 Q. In fact, sir, what they found is is that's the lowest  
6 number that they can get to with modern technology, isn't it?

7 A. No.

8 Q. Okay. You and I can at least agree that OSHA and NIOSH,  
9 EPA and IARC have all published whether they have a  
10 permissible exposure level or not; that even though they have  
11 those permissible exposure levels, there is still no known  
12 safe threshold, correct?

13 A. That makes no sense. It makes no sense to me at all as a  
14 professional to publish a value and say this is an allowable  
15 limit and then turn around and say, well, it's actually an  
16 unsafe allowable limit and we're not going to do anything  
17 about it. That makes no sense.

18 Q. And I know, sir, you disagree with it and you disagree  
19 with what you published because you originally said there's no  
20 safe level, you've testified that there is no safe level. And  
21 would you agree with me that when you testified in 1988, there  
22 were PELs, correct?

23 A. Yes, that's right.

24 Q. Okay. And so what we're really dealing with is semantics  
25 here. As we sit here today, OSHA, EPA, IARC, NIOSH, all of



1 those organizations have stated and state to this day that  
2 there is no known threshold of exposure to asbestos that will  
3 not cause disease, correct, sir?

4 A. That is the policy position. I have said that. And I'd  
5 be happy to explain further why that is a conundrum.

6 Q. Now, when you did your original 2002 paper, sir, you  
7 published that in the AIHA, the folks we just talked about;  
8 and when you published it, you indicated that it was funded by  
9 Coltec Industries. Do you remember that, sir?

10 A. Yes.

11 Q. And no where in this paper do you explain that Coltec  
12 Industries is Garlock, the folks sitting here today, correct?

13 A. Well, I don't know that that's true. I disclose that I'm  
14 using Garlock products in the manuscript.

15 Q. Correct. You say you use Garlock products, but you don't  
16 say here that this project was funded by Coltec Industries,  
17 the people who brought you Garlock.

18 A. That's not part of a disclosure. I wouldn't have even  
19 thought to characterize it that way. The people that funded  
20 the project were Coltec Industries. That's what I disclosed.

21 Q. Now, when you -- but you never disclosed and you've been  
22 criticized for this. You talked about Dr. Longo's criticism  
23 of you. That was part of the criticism, right, was that  
24 instead of saying this was funded by Garlock, the material  
25 that we use, you say Coltec Industries, and you've got to go

1 out and figure out who the heck Coltec Industries are,  
2 correct?

3 A. Garlock did not fund it. Coltec Industries funded it.

4 Q. And you understand that Coltec Industries owned Garlock  
5 at the time, right?

6 A. That's my understanding.

7 Q. Okay. So you could have just said Coltec Industries, the  
8 folks that own Garlock?

9 A. I didn't know what the relationship was between Coltec  
10 and Garlock. Coltec funded it. I used Garlock materials in  
11 the project and I disclosed all of that throughout the  
12 manuscript.

13 Q. So you're saying now that you used Garlock material and  
14 you didn't know that Garlock was actually funding the study?

15 A. I didn't say Garlock funded it. I said Coltec funded it.

16 Q. So you don't draw -- you draw a distinction there?

17 A. Of course.

18 Q. Even though Coltec --

19 A. Of course I draw a distinction between Coltec and  
20 Garlock.

21 Q. Okay. Now, this wasn't the first time when you published  
22 that in 2002 that you had this discussion with them about  
23 publishing these studies, correct?

24 A. With whom are you talking about?

25 Q. This is the 1996 letter, sir.

1 A. I know, but there was something that you asked me that I  
2 didn't quite catch.

3 Q. Well, this 2002 study, this is the culmination of many  
4 years of effort and negotiation back and forth between you and  
5 Garlock on different valve studies, correct?

6 A. Not Garlock. This communication is with Coltec  
7 Industries.

8 Q. Well, you agree with me, sir, that Coltec Industries  
9 owned Garlock, right?

10 A. That's correct, but the communication is with Coltec  
11 Industries.

12 Q. Okay. So when I say Garlock, can you agree with me that  
13 I mean Coltec Industries, also?

14 A. Actually, no, I can't.

15 Q. Okay. I'll just say Coltec Industries, the owners of  
16 Garlock, then.

17 A. That's fine.

18 Q. So in 1996, at least as early as that, you were already  
19 being in discussions, negotiations with Coltec Industries, the  
20 owner of Garlock, to do these types of studies at their  
21 behest, correct?

22 A. That's correct.

23 Q. And in fact, what you did was you sent back and forth a  
24 bunch of sort of bids, I would call them, where you say,  
25 listen, this is what type of work I can do and this is how

1 much it's going to cost you, correct, sir?

2 A. I certainly wouldn't call them bids. They were  
3 clarifications of scope and cost.

4 Q. Okay. Scope and cost. And so what you did was you  
5 basically said, listen, I have these types of services to  
6 offer to you and if you want them, this is what they're going  
7 to cost, correct?

8 A. Well, they requested this. This wasn't me soliciting the  
9 work. They requested this work.

10 Q. So Garlock -- or Coltec, the owners of Garlock, came to  
11 you and said, Mr. Boelter, we are defendants in litigation and  
12 we would like to hire you to do some tests for us, correct?

13 A. Well, no, actually, that's not the way the conversation  
14 went.

15 Q. Well, how did the conversation go?

16 A. The conversation went we are interested in understanding  
17 your knowledge and experience with regard to gaskets, your  
18 knowledge and experience with regard to the trades that work  
19 with gaskets. How would you go about developing an exposure  
20 assessment to characterize exposures related to various  
21 activities? And that's what this does is lay out how I would  
22 go about doing that.

23 Q. And so in 1996 they came to you and said we want to know  
24 your experience with gaskets and we want to know if you could  
25 develop some protocols and some studies to look at how much

1 people are exposed to asbestos using gaskets.

2 A. You know, I think that that's -- I'm not really okay with  
3 your choice of words there, but I get your concept. And the  
4 point is that's basically correct. Namely, there wasn't much  
5 in the literature at this point. There's only two data points  
6 I know of in the literature at this point, Cheng and  
7 McDermott, and in 1996 I think Spence and Rocchi was just  
8 being published, and I was familiar with the RS Means catalog.  
9 So there was very little data in the literature with regard to  
10 gasket exposure, exposures resulting from gasket activities.

11 And so the objective was how would I go about  
12 characterizing exposures resulting from gaskets when there's  
13 very little in the literature?

14 Q. And that was in 1996?

15 A. That's correct.

16 Q. In fact, you had been hired by Garlock in 1993 to begin  
17 with, correct?

18 A. Well, I started working with Coltec in 1993 with regard  
19 to developing how would you go about developing this.

20 Q. Okay. So in 1993 Coltec, the owners of Garlock, come to  
21 you and say we are -- they acknowledge they were in  
22 litigation, right?

23 A. Yes.

24 Q. And they said we need to come up with, because there  
25 isn't much in the literature, some analysis of different work

1 practices to see how people are exposed or potentially could  
2 have been exposed to Garlock gaskets, correct?

3 A. No, I don't think that's really correct. As a hygienist,  
4 my observation was where would the exposure be coming from  
5 from gaskets. And it's not surprising that there wasn't much  
6 published data in the literature with regard to gaskets  
7 because as a hygienist you wouldn't expect much fiber release  
8 from them.

9 So the question was how would you go about developing  
10 data, objective data is the terminology, to demonstrate what  
11 the exposures would be associated with different tasks and  
12 activities that involved gaskets?

13 Q. And all this began in 1993, correct, sir?

14 A. That is correct.

15 Q. And in fact, in 1993 you had the ability and training and  
16 background to conduct this type of testing, correct?

17 A. That's correct.

18 Q. In fact, you had the experience to do all this kind of  
19 testing on gaskets and whether people -- to obtain data  
20 regarding asbestos released from gaskets in 1993, correct?

21 A. That's correct.

22 Q. And so the only thing that had to really be done at that  
23 point was there needed to be some decisions as to whether they  
24 should pay for you to do that type work, correct?

25 A. Well, there were decisions and one of the questions is

1 how would it get funded, sure.

2 Q. And in fact, at least as of 1996, you were sending  
3 proposals back and forth with them and talking about how would  
4 you conduct this work, correct, sir?

5 A. There were exchanges of ideas, yes.

6 Q. And in fact, you talked about the different flanges that  
7 you might use and you talked about the industrial flanges  
8 believed to contain Garlock gaskets that had been obtained  
9 from a decommissioned power house. You remember those  
10 flanges, don't you, sir?

11 A. Yes.

12 Q. And in fact, many of those fittings and flanges were  
13 believed to be in service for over 40 years, correct?

14 A. Yes, that's what I was told.

15 Q. So the materials, at least, in 1996 you were talking  
16 about using for your studies had been in service for at least,  
17 according to you, at least 40 plus years, correct?

18 A. That's what I had been told.

19 Q. Now -- and there was nothing in 1996 or 1993 that kept  
20 you from doing these type tests other than the funding from  
21 Garlock or Coltec Industries, correct?

22 A. Sure. Somebody needs to pay for the work, sure.

23 Q. Right, but the techniques and everything, you knew them  
24 and could do it.

25 A. Yes.

1 Q. Now, you -- this is a picture from some of your work,  
2 correct?

3 A. Yes.

4 Q. And in fact, this is a valve fitting and you indicate  
5 that those gaskets, some of those gaskets were at least 39  
6 years old. So a lot of -- or at least some of your work  
7 involved fittings that are very old, correct?

8 A. Yes.

9 Q. Now, you talked about Dr. Longo and some criticisms of  
10 his work and the wire brushes and things like that. And I  
11 want to be sure that we're correct on the set up of this  
12 because what really happened was is you never published an  
13 article when Dr. Longo published his article that criticized  
14 his article in relation to the publication of it, correct?

15 A. I never said I did.

16 Q. I know you didn't. It was confusing. What happened was  
17 is you published your article. Dr. Longo and Dr. Hatfield  
18 sent a letter to the editor of the AIHA and said there were  
19 some problems in your study and they pointed those problems  
20 out, correct?

21 A. Hatfield is not a doctor, but --

22 Q. Mr. --

23 A. Longo, Hatfield, and several other people were part of a  
24 group that submitted a letter to the editor of the AIHA  
25 journal criticizing my 2002 manuscript.



1 Q. Well -- and that's a good point. Dr. Longo has a Ph.D,  
2 correct?

3 A. Yes.

4 Q. And Mr. Hatfield is just like you, he doesn't have an  
5 extended -- I think he has a masters. You don't have a  
6 masters, correct?

7 A. That's correct. I don't think Mr. Hatfield has any  
8 credentials either.

9 Q. But you would put him in the same position as with you,  
10 no credentials, right?

11 A. I have credentials so the answer is no, I don't put him  
12 in the same position.

13 Q. Now, you're aware that Garlock stopped making asbestos  
14 gaskets in the 1980s, correct?

15 A. I don't remember when they stopped making asbestos  
16 gaskets.

17 Q. Have you reviewed that in the past?

18 A. I don't remember what date it was.

19 Q. Would you agree with me that was at least ten years prior  
20 to you being involved in asbestos litigation?

21 A. I don't know.

22 MR. HARRIS: Objection, Your Honor. That's not  
23 true. I think Garlock stopped selling their gaskets in 2001.  
24 It's in all the discovery responses.

25 Q. Sir, do you know when Garlock stopped selling

1 asbestos-containing gaskets?

2 A. Based on the representations by Mr. Harris, 2001.

3 Q. So you don't have any independent knowledge of that?

4 A. That's what I was trying to tell you.

5 Q. Now, when you -- so when you were doing your research in  
6 1996, was that in furtherance of continuing to sell Garlock  
7 gaskets, then?

8 A. No, I don't know that I would characterize it that way.  
9 I was being asked how I would go about characterizing  
10 exposures from gaskets that had been in use and that's what I  
11 was focused on.

12 Q. Well, if they did stop selling asbestos-containing  
13 gaskets in 2001, were you aware -- the gaskets you got for  
14 your study, where did you get them?

15 A. From the Garlock facility in Palmyra, New York.

16 Q. And what year was that?

17 A. It would have been in the mid '90s sometime.

18 Q. Okay.

19 A. When I did my study.

20 Q. And when you got those materials in the mid -- well,  
21 that's a good point. When did you actually do the study and  
22 when was it published?

23 A. Okay. Just to be precise about this. The dates of the  
24 actual individual studies are in the respective reports and  
25 they speak for themselves. The publication of the manuscript

1 that we've been talking about was in 2002.

2 Q. Would you agree with me that those studies were done a  
3 few years before that publication?

4 A. Sure. They were done in the mid '90s.

5 Q. Mid '90s.

6 A. Yes.

7 Q. Okay. So what happened was in the mid '90s, you were  
8 contacted by Coltec, the owners of Garlock, and they said we  
9 want you to do some studies. You did those studies.

10 And then in the year 2002, according to counsel, a year  
11 after they stopped selling asbestos-containing gaskets, you  
12 published that study, correct?

13 A. Well, I actually presented the results at an AIHA  
14 conference in '96, '97, something like that. And then I  
15 undertook ultimately to prepare a manuscript for publication.

16 Q. Now, when you did this particular work, your work has  
17 been criticized by Longo and some other folks concerning some  
18 of the work practices. Do you remember that, sir?

19 A. I remember responding to what they said.

20 Q. Okay. And one of the criticisms was that the materials  
21 that you used, because they were old, or whatever reason, that  
22 a lot of the gaskets just fell out of the fittings. Do you  
23 remember that?

24 A. I do remember that. That's just plain nonsense.

25 Q. Plain nonsense.

1 A. Plain nonsense.

2 Q. Okay. Now, you actually videotaped -- let me go back.

3 Well, let me go forward.

4 This is you correct, sir?

5 A. On the left, yes.

6 Q. Okay. And this is actually a copy of the video that you  
7 did during your study, correct? Because y'all videotaped it.

8 A. Well, no. Each test that I did were eight distinct  
9 events over the course of 8 hours. I only videotaped the  
10 first event of the day. I did not videotape all of the events  
11 of the day.

12 Q. Okay. Well, let's look at this excerpt because one of  
13 the criticisms of your study was that the particular materials  
14 when you had these flanges and you opened them up, the gasket  
15 material actually was intact. That's what Dr. Longo,  
16 Mr. Hatfield, and others have said in the peer reviewed  
17 literature, correct?

18 A. That's correct, and that's nonsense.

19 Q. Okay. Well, let's watch here, sir.

20 And right there you're taking apart the flange, correct?

21 A. Yes.

22 Q. And you're examining the flange, correct?

23 A. Yes.

24 Q. And then you're going to proceed to take a putty knife  
25 and take the gasket off, correct, sir?

1 A. That's correct.

2 Q. And what you're trying to do there, sir, is just get the  
3 gasket off so the flange can be resealed, right?

4 A. No, I'm trying to get the parent gasket off so that the  
5 mating surfaces can be cleaned.

6 Q. And you got the gasket off, right?

7 A. Yes.

8 Q. And so what's in your hand right there, that round thing,  
9 the black thing, that's the gasket, right?

10 A. That's the parent gasket.

11 Q. Okay.

12 A. There is residue adhering to the surface of the flange  
13 that has to be cleaned by whatever the method was of this  
14 particular cycle of tests.

15 Q. Okay. So you have a gasket that was there. You pulled  
16 it off and it's still intact.

17 A. Right.

18 Q. And now you're going to use a cordless drill.

19 A. Right.

20 Q. And what you're doing there is taking any residue that  
21 would have been left and taking it off, right?

22 A. That's correct.

23 Q. And this is actually part of the numbers that you rely  
24 upon, right?

25 A. That's correct.

1 Q. And sir, if you -- sir, would you agree with me that if  
2 you have a flange that you separate like you did, you take a  
3 putty knife and you pry off the gasket and the gasket is still  
4 intact and then you have to clean the flanges, that there's  
5 not a whole lot of opportunity for there to be much asbestos  
6 on that flange if you still have the gasket intact, correct?

7 A. I guess it depends on what you mean by intact.

8 Q. Well, sir, you saw the picture. You had it in your hand.  
9 You actually had it by the middle. That was intact, wasn't  
10 it, sir?

11 A. I would call it an intact gasket. But that is not to  
12 suggest that there was not adhering gasket material on the  
13 flange surfaces. That's the whole purpose of this process of  
14 the removal of the gasket.

15 Q. Would you agree with me, sir, that it wouldn't look like  
16 that adhered material?

17 A. No, I don't agree with you. As a matter of fact, I have  
18 a number of photographs that I took over the course of this  
19 study to document what the various steps were and there  
20 certainly were gaskets that looked like that. That's also not  
21 a compressed sheet gasket.

22 Q. Sir, would you agree with me, at least -- and that was  
23 one of the criticisms is that a whole bunch if not over  
24 50 percent of those gaskets that you had in that study came  
25 out still intact. That might explain why you got such low

1 numbers. That's the criticism, correct?

2 A. No, that's not the criticism. Well, it may be the  
3 criticism, but they're just flat out wrong.

4 Q. And, sir, you would agree with me that at least in  
5 that -- and I just showed you one of the clips. There are  
6 multiple clips where the gaskets came out still intact. You  
7 would agree with me on that, right?

8 A. My definition of intact was that the gasket was still  
9 whole. That does not mean that the gasket did not tear and  
10 separate and leave residue on the surface.

11 Q. And how many of those gaskets in your study were still  
12 intact according to your definition?

13 A. All -- well, I can't answer the question off the top of  
14 my head. What I can tell you is there was only one flange  
15 face in the entirety of the study that did not have adhering  
16 gasket material and such in my judgment did not require  
17 cleaning. All the other flange faces had adhering material  
18 and some of them were tightly adhered, and some of them had a  
19 considerable amount of material to remove.

20 Q. Well, and that brings up two different questions. The  
21 first one is when we're talking about a gasket like I just  
22 showed you, one that comes out intact, you would agree with me  
23 that a little less than 50 percent of the gaskets that you  
24 tested came out intact, correct, sir?

25 A. I don't recall. But the other problem with this

1 terminology, the imprecision of this terminology is there are  
2 different types of gaskets and gasket constructs. In these  
3 photographs themselves, there are two different styles of  
4 gasket. One is called a ring gasket and the other is called a  
5 full-face gasket.

6 And in the -- for example, in the study that I did,  
7 several of the full-face gaskets, which means that the bolt  
8 hole penetrates the gasket, it looks like the flange on the  
9 left in your photo. Therefore, the majority of the gasket  
10 that was removed was never in contact with the mating surface  
11 because the only point of contact is a small ring near the  
12 throat of the fitting. Therefore, when you're looking at the  
13 gasket, you say, well, that gasket is whole and intact when,  
14 in fact, there is a very small part of the gasket that was  
15 ever the mated surface and therefore could have been  
16 deteriorated.

17 Q. Sir, you would agree with me that one of the criticisms  
18 in the literature is that when you did your study, that at  
19 least close to 50 percent of all of the fittings that came  
20 came out were in intact, correct?

21 A. That is nonsense. That may be the criticism. It is flat  
22 out incorrect.

23 Q. Do you know as we sit here today how many of those  
24 gaskets that you pulled out of those flanges like I just  
25 showed to the court came out in that exexact same way, intact?



1 A. I don't remember the statistics. I did cover the  
2 statistics of that type of information in my manuscript.

3 Q. Now, in fact, you used a cordless drill. That's what we  
4 talked about, correct? That's what we saw.

5 A. That's correct.

6 Q. Are you aware of individuals on naval ships using  
7 cordless drills to work on valves?

8 A. It didn't matter whether it was cordless or not. It was  
9 a 1250 rpm tool and it is consistent with the rpm -- for  
10 example, one of the other photos you had shown from a  
11 presentation I had given is the pipefitter in the field  
12 polishing the face of a flange with a corded drill. It's the  
13 same rpm.

14 Q. And, sir, the question is very simple. Are you aware of  
15 anyone who was a machinist mate in the United States Navy in  
16 the 1950s or '60s or even into the 1970s who used a cordless  
17 drill to work on valves?

18 A. No. Again, it's about the rpm. It's not about the  
19 source of power to the drill.

20 Q. And sir, are you aware of any pipefitters that worked in  
21 the trades in the 1950s, '60s and '70s that would have used a  
22 cordless drill to clean valves?

23 A. I don't know. You know, possibly. But you're missing  
24 the point.

25 Q. Now, sir, you also did all this work yourself, correct?

1 A. That's correct.

2 Q. In fact, Dr. Longo when he did his studies, he actually  
3 hired someone who actually had that experience to do the work,  
4 correct?

5 A. Actually, that's not correct with regard to his published  
6 manuscript.

7 Q. Now, when you were doing this work and publishing it,  
8 some of the gaskets that came off of those flanges didn't  
9 contain asbestos at all, correct?

10 A. That's correct.

11 Q. And in fact, even though they didn't contain asbestos,  
12 you still used those in determining your time-weighted  
13 averages, correct?

14 A. That's correct. I did not fiber differentiate and  
15 therefore I accepted whatever the fiber concentration was in  
16 the air, whether it was asbestos or not.

17 Q. And so how many flanges as we sit here today in your  
18 particular study were asbestos free?

19 A. I don't recall. To the best of my knowledge, that  
20 information is also in my published manuscript. But in the  
21 published manuscript, I do discuss that for at least one cycle  
22 that I recall, all eight of the gaskets were  
23 asbestos-containing, and that there was no difference between  
24 the results whether they were asbestos-containing or not.

25 Q. And in fact, in your study you said that there was at

1 least one valve that required no removal or any gasket  
2 residue, correct?

3 A. One face of one flange. That's what I said.

4 Q. Right. And 21 of those, less than 50 percent of the  
5 gasketting material was even left, correct?

6 A. I don't remember what the manuscript says.

7 Q. Now --

8 A. But that's consistent with what I have been saying is  
9 that there was adhering material on the mating surface.

10 Q. And in fact, you testified in the past that most of the  
11 gaskets that came off were intact, correct?

12 A. As I describe what it means to be intact, meaning you can  
13 hold it up, it still looks like a gasket. Some of them were  
14 pulverized.

15 Q. And when we say intact, that's the video that we saw,  
16 correct?

17 A. Well, I would call these gaskets I'm looking at right  
18 here intact. They still look like gaskets. It's a matter of  
19 term.

20 Q. Now, when you conducted your study, you -- let me go  
21 back. When you were discussing Dr. Longo's studies, you were  
22 talking about his vigorous use of the grinder. Do you  
23 remember that?

24 A. Yes.

25 Q. And in fact, when you've done these studies, what you've

1 tried to do is make sure that you use a very vigorous process,  
2 correct?

3 A. Depends upon the technique that's being used, but I've  
4 measured under conditions which I would -- which I would judge  
5 to be nonaggressive through to very aggressive techniques.

6 Q. Okay. Well, in fact, when you've talked about this in  
7 the past, when you're giving presentations about your studies  
8 and trying to convince people that your studies should be  
9 looked at, you've talked about the use of aggressive  
10 techniques, right?

11 A. That's what I just said, yes.

12 Q. In fact, you didn't say, well, I used some nonaggressive  
13 and some aggressive. In fact, you record the level of  
14 aggressiveness, correct?

15 A. That's correct. So aggressiveness is a judgment call.

16 Q. Right. And so it's a judgment call how aggressive you  
17 get with this, but you would agree with me that you were  
18 aggressive and Dr. Longo was aggressive. The question is  
19 where is that line of aggressiveness, I guess.

20 A. No, I don't agree with you. I went through a long list  
21 of problems with Dr. Longo's work, and I'd like -- I'd be  
22 happy to go through them again if you want me to. But there  
23 is no comparison from a design standpoint and an exposure  
24 sampling and assessment standpoint between the work that I've  
25 done and Dr. Longo. That's evident with the clear difference

1 between Longo's results and everyone else's.

2 Q. Well -- and in fact, Dr. Longo's results have been  
3 published and peer reviewed just like yours.

4 A. And he doesn't use them himself. He doesn't rely upon  
5 them.

6 Q. Sir, the question was very simple. Were Dr. Longo's  
7 results published and peer reviewed?

8 A. They were published and peer reviewed, and I would be  
9 happy to explain what it means to go through peer review and  
10 what it means with regard to the flaws because the peer  
11 reviewers did not have access to the information that I had  
12 access to to identify the flaws.

13 Q. And that criticism could be made in regards to your  
14 article too, correct, sir?

15 A. No.

16 Q. So you're saying the peer reviewers had the video tapes  
17 where the gaskets came out whole. They had knowledge of the  
18 fact that you used asbestos and asbestos-free and added those  
19 into the time-weighted analysis. They had all those things,  
20 sir?

21 A. They certainly could have if they wanted to. My point is  
22 that my work has been examined by any number of people over  
23 any number of years. There is no criticism that I am aware of  
24 published in the literature on them and it has stood up to  
25 scientific scrutiny at every examination.

1 Q. You mean other than the criticism of Longo, Hatfield and  
2 Millette and others?

3 A. I addressed that in an open letter to the editor. And  
4 that's -- that's a mischaracterization. Dr. Longo is flat out  
5 incorrect, which I addressed in the letter to the editor. He  
6 didn't even bother to respond to my criticisms.

7 Q. So, sir, the bottom line, though, is you have your  
8 opinions that have been published; Dr. Longo has his opinions  
9 that are published. And what happens in trial is you come in  
10 and give your opinion. Dr. Longo gives his opinion or  
11 somebody else gives their opinion. And a jury decides what  
12 they believe is right, correct?

13 A. Well, I think more correctly what has happened is the  
14 time that Dr. Longo's work has, in fact, been examined it has  
15 been found to be junk science. And I don't think it's  
16 appropriate in a courtroom to rely upon junk science.

17 Q. And sir, I understand you want to advocate your position.  
18 But the bottom line is that Dr. Longo's publication, the thing  
19 that was excluded as junk science in one court from Lamar  
20 County in Texas -- have you ever been to Lamar County?

21 A. I have.

22 Q. Did you testify in that case?

23 A. I did, in fact.

24 Q. In fact, you were on the other side. And one court --

25 A. Other side?

1 Q. The other side of the issue. You didn't testify for the  
2 plaintiffs, correct?

3 A. That's correct.

4 Q. Okay. And one court in Texas said that since it hadn't  
5 been published -- because it hadn't been published at that  
6 point, correct?

7 A. I don't -- I don't think that's the court's conclusion is  
8 that because it hadn't been published. I think the court was  
9 very clear on the erroneous and deceptive statements that  
10 Longo was saying with regard to his work.

11 Q. I understand, but go with me here. Dr. Longo's  
12 publication that was excluded in one court in Texas, that had  
13 not been published at the time in the peer reviewed  
14 literature, correct?

15 A. That is correct. But that's not what the hearing was  
16 about, I don't believe.

17 Q. And in fact, what happened was Dr. Longo then after that  
18 submitted it for peer review. Dr. Mangold and Mr. Liukonen  
19 actually submitted the Lamar County order to the editors of  
20 that journal to try to keep it from being published, correct?

21 A. I wouldn't want to speak for them. I don't know about  
22 what they did or didn't do.

23 Q. Sir, you --

24 A. The manuscript should not have been published. The  
25 problem is in peer -- I'd be happy to explain peer review

1 because I've been a peer reviewer for a number of journals and  
2 I know what the instructions are and I know what the process  
3 is and I'd be happy to explain that.

4 Q. And sir, the bottom line is whatever the process is for  
5 your paper or for Dr. Longo's, they both went through it.  
6 They're both published in the literature. And it's up for  
7 scientists to decide which one they want to rely upon,  
8 correct?

9 A. No, I don't agree with you. The purpose of peer review  
10 and putting something into a journal is to make sure that it's  
11 clear what someone did such that it can be submitted for -- to  
12 other scientists to try to reproduce it. Dr. Longo has never  
13 been able to reproduce his own work. No other scientist has  
14 been able to reproduce his own work either and there are many  
15 reasons for it and I went through quite a few of them.

16 Q. And I understand, sir, you want to advocate your position  
17 on that, but the question is very simple. Your paper was  
18 published and peer reviewed, correct?

19 A. Correct.

20 Q. Dr. Longo's publication was published and peer reviewed,  
21 correct?

22 A. That's correct.

23 Q. And it was after -- published and peer reviewed after the  
24 Lamar County order, correct?

25 A. That is correct.



1 Q. Okay.

2 A. Or during the same period of time and the paths crossed  
3 with one another.

4 Q. Now, sir, when you conducted your study, you didn't use a  
5 mask or respirator, correct?

6 A. That's correct.

7 Q. And in fact, when you were doing this study, you were  
8 doing it at the behest of Coltec and Garlock -- or Coltec, the  
9 owner of Garlock.

10 A. That is correct.

11 Q. And so you knew -- and we talked about 1996. You knew  
12 this particular study would be used in litigation, right?

13 A. I didn't actually know one way or the other.

14 Q. So you didn't know that the studies that were funded in  
15 the 1990s that were then published in 2002, you didn't think  
16 those were going to be used in litigation?

17 A. What I've known about the work that I've done for 40  
18 years is that it is subject to interpretation by many in many  
19 different circumstances, and therefore everything I've done I  
20 accept at some point may end up in litigation for some reason.  
21 It's not lost on me that when I conducted the studies in the  
22 mid '90s for Coltec that it might end up in litigation. I was  
23 not being presented as an expert at that time to address  
24 questions in litigation.

25 Q. But what you knew is that this study could be used in

1 litigation, correct, sir?

2 A. I was trying to advocate good science as I am right now.  
3 Develop a competent and reliable exposure assessment strategy  
4 and develop results for someone to rely upon.

5 Q. And, sir, you knew your study could potentially be used  
6 in litigation because it was being funded by Coltec, the owner  
7 of Garlock, correct, sir?

8 A. In that sense it's no different than any project that I  
9 do. I want to do the best job I can to provide reliable,  
10 competent, relevant, reliable, reproducible results for  
11 somebody to rely upon.

12 Q. I understand, sir. The question is very simple. You  
13 knew when you did those studies that were funded by Coltec,  
14 the owners of Garlock, that your studies could potentially be  
15 used in asbestos litigation, correct, sir?

16 A. I didn't know how it was going to be used, no.

17 Q. So you were doing studies that were being funded by a  
18 manufacturer of asbestos-containing products and you didn't  
19 think it would be used in litigation?

20 A. I didn't know. The reason that these -- you'd have to  
21 ask Coltec those questions.

22 Q. Now, when you did this study, you wore no mask or  
23 respirator, correct?

24 A. That's correct.

25 Q. And I want to talk to you about that. Would you agree

1 with me that when you didn't wear a mask or respirator -- did  
2 you already know the results of your tests before you did it?

3 A. No, I didn't know the results.

4 Q. So you didn't know if there was potentially a huge  
5 exposure to asbestos because you hadn't done the test yet,  
6 correct?

7 A. No, I wouldn't say that either. Industrial hygiene is  
8 anticipation, recognition, evaluation, control. The first  
9 word is anticipation. I'm familiar with the literature. I'm  
10 familiar with what causes airborne concentrations of things  
11 and I know what it takes to get airborne concentrations. I  
12 couldn't conceive of how a gasket could release fiber  
13 concentrations at unacceptable levels.

14 Q. We're going to talk about the literature in a minute.  
15 But you would agree with me that at least before you do the  
16 test, if there was a potential for exposure to asbestos, that  
17 it would be prudent to wear a mask or respirator, right?

18 A. Not for me, no.

19 Q. Okay. Now, when you worked with the thermal insulation,  
20 you all had masks and respirators, right?

21 A. Again, it's back to anticipation. I knew the literature.  
22 I knew what the material was. I worked with this type of  
23 material before. I have a respect for insulation material.  
24 I'm not going to do that without a mask.

25 Q. And prior to your doing this without a mask, what was the

1 literature that was out there concerning asbestos and gaskets?

2 A. The only literature I was familiar with was Cheng and  
3 McDermott, and the Spence and Rocchi, I think, was right  
4 around that same time.

5 Q. Okay. So you didn't even know about Liukonen at that  
6 point.

7 A. No.

8 Q. So these pictures that we have of an individual punching  
9 out asbestos when they're not even grinding it wearing a  
10 respirator, you weren't aware of that.

11 A. I don't think so.

12 Q. Were you aware that at the Puget Sound Naval Shipyard  
13 that the individual who was just stamping out gaskets was  
14 wearing not only a full-faced respirator, but it was supplied  
15 with air? You didn't know about that?

16 A. No, I didn't, but now that I see the data, there is no  
17 reason to be wearing any of that.

18 Q. Okay. But you would agree with me that would have been a  
19 prudent thing to do if you think there would have been  
20 exposure to asbestos, right?

21 A. No.

22 Q. The navy wasn't being prudent when they did that?

23 A. I'm not going to make a judgment of the navy. What's  
24 clear to me is whatever -- for whatever reasons, this person  
25 was suited up and wearing this type of a device. It was

1 unnecessary.

2 Q. Okay. And so you would think this is unnecessary today  
3 too?

4 A. That's correct.

5 Q. Okay. Now, you talked about Cheng and McDermott. This  
6 is the Chang and McDermott article you just talked about,  
7 correct, sir?

8 A. Yes.

9 Q. And in fact, Cheng and McDermott talks about this  
10 question of whether you should wear a mask or respirator, and  
11 this is what was state of the art at the time, that you would  
12 have had prior to ever doing your study without a mask or  
13 respirator, correct, sir?

14 A. That seemed like a compound question.

15 Q. Was Cheng and McDermott available prior to your study,  
16 sir?

17 A. Yes, I was aware of it.

18 Q. And you were aware of this prior to your study. And  
19 Cheng and McDermott said, "Workers should be required to wear  
20 a half-face HEPA respirator during dry removal of  
21 after-service sheet gaskets."

22 That's what they said, correct, sir?

23 A. Well, there is something else that goes before this that  
24 talks about a precautionary measure. So I think that what  
25 they're suggesting here is as a matter of prudence, this might

1 be a good idea.

2 Q. Well, and that's what we were talking about. When we're  
3 talking about what was known or knowable prior to your study,  
4 what was prudent, Cheng and McDermott, what was published and  
5 what you had available to you, told you that that during dry  
6 removal of after-service sheet gaskets -- that's what you did,  
7 right? Dry removal of after-service sheet gaskets.

8 A. That is correct

9 Q. Correct?

10 A. That is correct.

11 Q. It recommends -- or Cheng and McDermott -- and this was  
12 an industry study done with Chevron, right?

13 A. That's right.

14 Q. So you're aware of the Shell studies that Dr -- or  
15 Mr. Liukonen talked about. You're aware of those, right?

16 A. I'm aware of the data points. They're not studies.

17 Q. Okay. You're aware that Chevron is looking at the same  
18 thing, and they actually published it and said if you're doing  
19 this type of work prior to your study, wear a half-face HEPA  
20 respirator, right?

21 A. Well, that's what they said, but it's also a field study  
22 involving an operating refinery where there is insulation  
23 materials. And when I read this, my conclusion was those  
24 values that they're reporting are from activity other than the  
25 gaskets.

1 Q. Okay. Well, you disagree with Cheng and McDermott, the  
2 authors, because what they said -- and it's very specific. It  
3 doesn't say, hey, we're working in a refinery and you could  
4 potentially be exposed to thermal insulation outside. It says  
5 when they're working with dry removal, wear a mask or  
6 respirator, correct?

7 A. That was their precautionary measure approach towards  
8 their workers, yes.

9 Q. And in fact, sir, you know that if your study was going  
10 to be used in litigation, that it wouldn't really help if you  
11 were wearing a mask or respirator, correct?

12 A. I had no interest to expose myself to conditions which  
13 are unacceptable. If I felt that I was putting myself or my  
14 employees in a condition of unacceptable exposures, I would be  
15 wearing protective equipment.

16 Q. Now, other than Cheng and McDermott, Dr. Millette has  
17 also published on gaskets, correct?

18 A. What's this?

19 Q. This is "The Releasability of Asbestos Fibers from  
20 Asbestos-Containing Gaskets." You've seen this before?

21 A. This is not a peer reviewed journal.

22 Q. And sir, you've seen this before, right?

23 A. I have, yes.

24 Q. Okay. And when Dr. Millette is looking at and doing the  
25 studies of releasability of asbestos fibers from

1 asbestos-containing materials, they actually have a full-face  
2 respirator, right?

3 A. Very dramatic.

4 Q. Well, in fact, we know the folks, Cheng and McDermott,  
5 who were working for Chevron, not manufacturing  
6 asbestos-containing products, say you should wear a half-face  
7 HEPA respirator when working with asbestos-containing gaskets.  
8 Dr. Millette publishes this, says the same thing, correct,  
9 sir?

10 A. That's not a half-face piece. I don't know what your  
11 question is.

12 Q. The question is is that instead of doing a study where  
13 you're not wearing a mask or respirator, at least prior to  
14 your study there were studies that indicated that when you're  
15 doing gasket work, you should wear a mask or respirator,  
16 correct, sir?

17 A. No, I don't agree with that. Further -- I understand  
18 what Jim Millette did here, and the results themselves are not  
19 significant.

20 Q. And I'm not talking about the results, sir. I'm just  
21 talking about whether you should wear a mask or respirator  
22 when working with asbestos-containing gaskets.

23 A. Well, the truth is if, in fact, there is no known safe  
24 level of exposure to asbestos and if when you're doing  
25 anything with asbestos material you should be wearing a mask,



1 we should all be wearing masks in this courtroom.

2 Q. And sir, you would agree with me that there is a huge  
3 difference between being in a courtroom today in 2013 and  
4 being on board a ship working on a valve that could be this  
5 size or as big as me grinding on it for a whole day. That's  
6 totally different than just being in this courtroom, correct,  
7 sir?

8 A. Who grinds on a valve all day long? What's that  
9 scenario?

10 Q. Sir, didn't you testify that you've seen people grind on  
11 gaskets or have to take gaskets off for two days?

12 A. You're talking about on a ship. I've never seen that on  
13 a ship.

14 Q. Okay. Well, we'll go through that in just a second.

15 Sir, you're a licensed asbestos abatement individual,  
16 right?

17 A. I am a licensed AHERA building inspector management  
18 planner.

19 Q. Okay. If we go to the AHERA regulations, and if  
20 individuals are going to do work -- you've seen this type of  
21 danger sign before, correct?

22 A. Sure.

23 Q. And in fact, what it says is it tells you that the  
24 "Facility and structural building components in this area,  
25 such as pipe insulation, floor tiles, transite walls, gaskets,

1 and structural fireproofing should be assumed to contain  
2 asbestos. They are not a health hazard unless disturbed and  
3 fiber released. Avoid disturbing materials and creating dust.  
4 Cancer and lung disease hazard."

5 That's a typical sign in your work, correct?

6 A. No. Actually, I've never seen signage like this. This  
7 is not required by regulations. It's not required -- it's not  
8 an EPA sign. It's not an OSHA sign. I don't know. For all I  
9 know, you concocted it.

10 Q. Okay. Well, sir, I bought it off the internet.

11 A. Okay.

12 Q. Would you agree with me, sir, that --

13 THE COURT: I got ordained on the internet.

14 MR. FROST: Well, I didn't make it up myself, Your  
15 Honor.

16 Q. You would agree with me, sir, that when there is a  
17 facility that contains asbestos, you've seen warning signs  
18 such as this, correct?

19 A. Sure. During abatement projects.

20 Q. Correct. And what it says is you shouldn't be messing  
21 around with asbestos, including gaskets, and disturbing those  
22 materials.

23 A. Well, that's what this particular signage says, but then  
24 it goes on to say "unless disturbed and fibers released." So  
25 it doesn't say that fibers get released from these things.

1 Q. And sir, I didn't say that. The question is is do they  
2 treat gaskets in place that are potentially could be  
3 disturbed, they are a danger if they're disturbed, correct?

4 A. No, that's not correct.

5 Q. Okay. Well, we'll test that in a minute.

6 Sir, you -- this is the Coltec -- or Colt  
7 Industries/Garlock material safety data sheet. Did you review  
8 that prior to doing your tests?

9 A. I don't know whether I saw it or not.

10 Q. Okay.

11 A. I'm familiar with these.

12 Q. You're familiar with this?

13 A. Sure.

14 Q. Would you disagree with Garlock when they say, "When  
15 removing used gaskets, avoid excessive mechanical actions and  
16 place the asbestos-containing residue in a plastic bag for  
17 disposal. As a precaution, a dust mask should be worn by  
18 individuals when engaged in removal of used gaskets."

19 So, sir, you disagree with that, correct?

20 A. Actually, yes, I disagree.

21 Q. And in fact, sir, if I went to a job site and I was  
22 dealing with asbestos-containing gaskets, I'd have to do  
23 things like this, correct? I'd have to bag it. I'd have to  
24 have special precautions. I'd have to be in a Tyvek suit.  
25 I'd have to water it all down and put some type of material

1 all the way around it to contain just a little gasket if it's  
2 small or an entire area if it's a large gasket, correct?

3 A. Well, there's a few things I'd like to point out about  
4 this photo. There isn't a gasket to be seen in this photo so  
5 I don't know why you think this is what has to be done.

6 Q. Sir, are you -- if I go right now and I find a valve that  
7 is in place that -- and when I have a valve in a hot system in  
8 place, don't I assume particularly in, say, a petrochemical  
9 plant or on board a naval ship that it contains  
10 asbestos-containing gaskets?

11 A. I don't know whether it would be assumed to be or not.

12 Q. Let's just assume that that's what the testimony will be.  
13 That you would assume that if you're a petrochemical refinery.

14 A. All right.

15 Q. That wouldn't surprise you, would it?

16 A. No, but it would be really surprising to me if a glove  
17 bag was used to remove a gasket. I've never seen that done  
18 regardless of the 94 regs. I've never seen that done.

19 Q. Would you agree with me if there is a gasket in place  
20 that I know is asbestos-contained, that I have to segregate  
21 off that area. That I have to bring in special people who are  
22 trained to contain asbestos. I have to make sure that they  
23 have the proper safety equipment, including respirators, in  
24 order to even touch that gasket.

25 A. The reality is if you think that's what's supposed to be

1 done, the next time you take your car into the shop, take a  
2 look around at how they're treating gaskets. Take a look  
3 around at the way gaskets are being handled. There is no  
4 reason to do them that way and people have figured it out so  
5 they don't do it that way.

6 Q. Okay.

7 A. There's no reason to.

8 Q. And I'm not talking about whether at my local shop they  
9 do things differently. I'm talking at -- pursuant to the  
10 federal regulations, which you're aware of, that's what you're  
11 supposed to do, correct?

12 A. You're supposed to rely upon objective data, which mine  
13 is. And if you can demonstrate that there is not a potential  
14 for exceeding the PEL, which my data does, there is no reason  
15 to do it this way.

16 Q. And if individuals use the Millette data or they use the  
17 Longo data or they even use Cheng and McDermott, then what you  
18 have to do is comply with all those precautions, including  
19 segregating the area, wearing Tyvek suits, wearing masks and  
20 respirators, correct, sir?

21 A. It would actually be a mistake to rely on that data for  
22 that purpose because it's missing data. It's not reliable  
23 data. And it wouldn't be a very good basis upon which to  
24 build a program. But if that's all the data you have, then I  
25 understand where you're headed with the how do you approach

1 a project. But that's the reason for having quality data in  
2 the literature that people can rely upon objectively.

3 Q. And sir, it's very simple, which is if I'm at a refinery  
4 right now and I have a valve that I believe contains a Garlock  
5 asbestos-containing gasket -- how much asbestos was in a  
6 Garlock gasket?

7 A. It depends.

8 Q. From what to what?

9 A. Here's the problem is that in manufacturing, when you're  
10 making a gasket, you're making it with ingredients. So you  
11 put X pounds into a blender and Y gallons of whatever into a  
12 blender and so you have a recipe card that talks about  
13 percentages or weights. That's very different than when I  
14 take a bulk material and I want to analyze that material in a  
15 laboratory visually making an estimation of percentage.

16 So when I'm looking at a result of a bulk sample, that  
17 probably doesn't correlate with the results of an ingredient  
18 card. So it depends on what you want to use as a basis for  
19 the percent.

20 Q. Give us both. When you do your bulk sampling, what is  
21 it? And when it comes out of the factory, what is it?

22 A. Well, I saw -- I saw somewhere on something today where  
23 the gaskets were 70 to 90 percent asbestos. I've evaluated  
24 gaskets that are 5 percent asbestos if they're  
25 asbestos-containing. So it's a wide range. It depends upon

1 the construct, whether it's a spiral wound, woven, compressed  
2 sheet. There's metal laminated. There are many, many  
3 different types of gasket constructs and therefore to say,  
4 well, what's the range. It's like, well, okay, from zero to  
5 something.

6 Q. Sir, would you agree with me that compressed gaskets, the  
7 type of gasket that Garlock primarily sold, was 70 to  
8 90 percent asbestos when it left the facility?

9 A. If that's what they've said, then that's what they've  
10 said. When I measure bulk samples of gaskets, those are not  
11 the values that I find.

12 Q. And so, sir, you don't believe that if we're on a site or  
13 facility where we're dealing with asbestos-containing gaskets,  
14 that you have to do any of the precautions that we see in the  
15 picture.

16 A. If the only issue is a gasket, the answer is no. I can  
17 tell you I've never seen that done if the only issue is a  
18 gasket.

19 Q. Okay. And how many times have you been in a refinery  
20 when they're changing gaskets?

21 A. A number of times.

22 Q. Since when?

23 A. Since 1982.

24 Q. So when Cheng and McDermott of Chevron say that you  
25 should use a half-face respirator, you believe that they were

1 just incorrect.

2 A. What they're suggesting is as a precaution do the  
3 following. I don't disagree with their precautionary  
4 approach. I think that's fine.

5 Q. Now, in fact, sir, when you did some of your testing,  
6 some of the flanges that you actually did, you were looking  
7 down upon them and they were upside down, correct?

8 A. I was looking down on them and they were upside down?

9 Q. Do you see that picture right there, sir?

10 A. Wouldn't I be looking up at them?

11 Q. Well, maybe I said that wrong.

12 A. Okay.

13 Q. You see the picture in the lower right, correct, sir?

14 A. Yes.

15 Q. So you have a flange that's hanging down and the asbestos  
16 would be on that bottom portion, right?

17 A. Correct.

18 Q. And so you would be -- that's the gasket right there.

19 A. That's the mated surface, yes.

20 Q. And so whenever you're taking anything off of that, it  
21 just falls right down, right?

22 A. Well, gravity does have that effect.

23 Q. Yeah. We can agree on something. Gravity does have that  
24 effect.

25 A. But if we're talking about fibers that you asked me



1 earlier about drifting in the air, well, the answer is, no,  
2 they don't just fall right down.

3 Q. I'm talking about the gasket material itself. It just  
4 falls down from there, correct, sir?

5 A. Well, what I'm doing is -- yeah, I'm taking off, abrading  
6 off various materials that are on the mated surface and that  
7 would have the tendency to fall, correct.

8 Q. And you talked about looking at gaskets on industrial  
9 sites. Have you ever seen individuals like this where they're  
10 doing -- at industrial sites work on gaskets? Have you ever  
11 seen anything like that?

12 A. I don't know what this picture is.

13 Q. Okay. It's two individuals working on a flange.

14 A. Well, then, you've got better eyes than I do because I  
15 have no idea what they're working on.

16 Q. Now, you have looked at -- and seen pictures of Crane Co  
17 valves, correct?

18 A. Yes.

19 Q. And you would agree with me that Crane Co valves can be  
20 very small or they can be very large?

21 A. There's a range, yes.

22 Q. In fact, these are typical valves on board ship and you  
23 see they're on a pallet. There's like four of them on a  
24 pallet, correct?

25 A. Yes.

1 Q. And that's just one big valve on a pallet. Do you see  
2 that, sir?

3 A. I do.

4 Q. And in fact, you're aware, sir, that on board ships, a  
5 valve can be very small or it can be as big as a pallet,  
6 correct?

7 A. I've seen quite a range of different sized valves, yes.

8 Q. In fact, that's a Crane valve right there and you've  
9 testified on behalf of Crane Co in the past, right?

10 A. Yes.

11 Q. And that Crane valve is bigger than the pallet.

12 A. Yeah. That's a main steam line valve on a ship.

13 Q. And those particular valves, when they have that  
14 material, that flange, whenever they're in a steam system,  
15 they have to have gasket material, correct?

16 A. Right. It's not going to be compressed sheet.

17 Q. Now, would you agree with me that Garlock, based on all  
18 the cases that you have been involved in, was a major supplier  
19 of asbestos-containing gaskets to the United States Navy,  
20 correct?

21 A. I don't know that I would characterize that. From what I  
22 do know is that they were substantially smaller as a supplier  
23 than Johns-Manville.

24 Q. Now, you're aware that -- you also testified for Goulds  
25 Pumps, correct? Or at least been retained by them.

1 A. I've done some work for them, yes.

2 Q. And in fact, Goulds Pumps, these types of pumps are  
3 industrial applications and also can be on board ships,  
4 correct?

5 A. I don't know.

6 Q. And these pumps that -- pumps basically allow things to  
7 flow through either a piping system or through a ship,  
8 correct? That's what pumps do.

9 A. Well, you wouldn't use a pump to pump things through a  
10 ship. That doesn't make sense.

11 Q. So there's no pumps on board ships?

12 A. Well, there are pumps on board ships. But you don't pump  
13 through a ship. You pump through pipes.

14 Q. Well, that's my little terminology. But you're using a  
15 pump to pump things through pipes.

16 A. I try to be as precise as I can be.

17 Q. And you would agree with me that these types of pumps on  
18 board ships or in industrial applications can be very small  
19 like we see there or they can be very large, correct?

20 A. Sure.

21 Q. In fact, they can be so large in these industrial  
22 applications that they can be as big as a man.

23 A. It depends upon how big the men are, sure.

24 Q. Okay. And you would agree with me that these  
25 applications, because they're in a line, when they have these

1 flanges, they have to have gaskets that go in between those,  
2 correct?

3 A. Sure. Probably not compressed sheet.

4 Q. And in fact, when you talked about the requirement that  
5 it may take a couple days to work on these gaskets, that's the  
6 type of thing that you're talking about, correct?

7 A. Yeah. This is a really good slide to give an  
8 appreciation of how you can't just do a gasket after a gasket  
9 after a gasket. That just -- this is -- this is a multi-day  
10 project to do anything with this pump. You don't want these  
11 systems to fail. That's why these systems are designed not to  
12 fail.

13 Q. Now, this -- you talked in depth about your criticism of  
14 Dr. Longo and how someone shouldn't rely upon Dr. Longo's  
15 data. You remember that, right?

16 A. Yeah, but if you read the exchange that I had with them  
17 in the letter to the editor, Dr. Longo and Dr. Hatfield are  
18 articulate about why people should not rely upon their own  
19 work.

20 Q. Well, and in fact, what you did was you took your study  
21 and you sent it to OSHA to try to get gaskets not to have a  
22 labeling requirement, correct, sir?

23 A. No, that's incorrect.

24 Q. Well, let's walk through your letter. This is your  
25 letter, right? Or this is the response to your letter from

1 the U.S. Department of Labor, OSHA, correct, sir?

2 A. Correct.

3 Q. And it's addressed to you.

4 A. Correct.

5 Q. And this is in 2013; is that correct? I'm sorry, 2003;  
6 is that correct?

7 A. I don't remember the date.

8 Q. Okay.

9 A. You probably blocked it.

10 Q. You would agree, sir, that if I go on OSHA's website and  
11 I type in Fred Boelter, this is what comes up, right?

12 A. I'm not aware of that.

13 Q. Well, you are aware you received this letter from OSHA,  
14 right?

15 A. I did, yes.

16 Q. Okay.

17 A. Well, not this, but I did receive a letter from them.

18 Q. And basically what you did was you sent OSHA your study,  
19 correct?

20 A. That's correct.

21 Q. So the 2002 study, the study that you did without any  
22 respiratory protection, that was funded by Coltec, the owners  
23 of Garlock, you sent that study to OSHA asking them whether  
24 you could get an interpretation of the OSHA rules saying that  
25 asbestos-containing gaskets do not have to be labeled with a

1 cautionary label, correct, sir?

2 A. That is absolutely incorrect.

3 Q. Okay. Well, let's walk through this. It says, "This  
4 letter constitutes OSHA's interpretation of the requirements."

5 You remember that, correct, sir?

6 A. Go ahead. I don't remember the letter.

7 Q. Okay. Do you need a copy, sir?

8 A. It depends upon the questions you're going to ask.

9 THE COURT: Let's take a break until 4:15 and we'll  
10 let him look at the letter.

11 Back to the confidentiality thing, I'm going to  
12 amend the order to include the language that this email  
13 suggests. It seems to me that it's accurate as a matter of  
14 fact and a matter of law, and I'm just going to amend our  
15 order to provide for that and get back the --

16 MR. INSELBUCH: I'm sorry, Your Honor, I couldn't  
17 hear you.

18 THE COURT: I'm going to amend the order that was  
19 entered yesterday to include the language that this party  
20 wants, Tafelski has suggested so that we can get the  
21 transcript back. It seems to me that what she says is  
22 accurate as a matter of fact and as a matter of law. And I'm  
23 happy to include that language. And if that satisfies them,  
24 we'll get the document back.

25 MR. INSELBUCH: Fine, Your Honor.

1 THE COURT: All right. And I'll do that while we're  
2 on a break. Be back at 4:15.

3 (Brief recess at 4:07 p.m.)

4 FREDERICK BOELTER

5 CROSS EXAMINATION (Cont'd.)

6 BY MR. FROST:

7 Q. Mr. Boelter, we're back. Just so we can set back to  
8 where we were, you had already done your work and published  
9 your 2002 article in the peer reviewed literature that was  
10 funded by Coltec, the company that owns Garlock, prior to  
11 December 22nd, 2003, correct?

12 A. Correct.

13 Q. And the letter we have up on the screen is OSHA's  
14 response to your letter, and it says, "Dear Mr. Boelter:  
15 Thank you for your March 14 letter to the Occupational Safety  
16 and Health Administration's Director of Enforcement Programs.  
17 You have a question regarding the labeling of gaskets and  
18 packings containing greater than 1 percent asbestos. This  
19 letter constitutes OSHA's interpretation only of the  
20 requirements discussed and may not be applicable to any  
21 question not delineated within your original correspondence."  
22 Correct? That's what OSHA wrote.

23 A. Yes.

24 Q. And what happened is you've taken your study, you sent it  
25 to OSHA and you asked them whether asbestos-containing

1 gaskets, in particular the ones manufactured by Garlock, if  
2 there is a warning requirement still in place based on your  
3 results, correct?

4 A. No, before the break I said that's incorrect and I say  
5 again that's incorrect.

6 Q. Okay. Let's walk through what OSHA says. They said,  
7 "Scenario," and when they say scenario, what they say is "you  
8 have conducted a study of asbestos exposures resulting from  
9 the removal and replacement of asbestos-containing gaskets and  
10 packings." That's your 2002 study, correct?

11 A. Correct.

12 Q. And the question, and this is a question that you raised  
13 to OSHA is, "Given your findings," and when it says your  
14 findings, that's your particular study, correct?

15 A. Yes. But also remember, in the previous page OSHA said  
16 they were paraphrasing what I was asking.

17 Q. Right.

18 A. So this is their interpretation of my question.

19 Q. Right. This is OSHA's response back to you after you've  
20 published and sent them your article trying to get gaskets  
21 exempted from a warning that they contain asbestos and that  
22 asbestos can cause harm to individuals using it, correct?

23 A. That is fundamentally incorrect. That's what I said  
24 before. You are completely mischaracterizing what I said in  
25 my letter. I think it might be worthwhile if you put up my



1 letter to OSHA.

2 Q. Well, let's go by OSHA's interpretation. Would you agree  
3 with me that as of 2003, that OSHA required that  
4 asbestos-containing gaskets contain a warning on them?

5 A. What's your question, I'm sorry?

6 Q. Prior to -- the reason you're writing this letter is  
7 prior to 2003, OSHA required on asbestos-containing gaskets  
8 that they contain a warning, correct?

9 A. You're saying that's why I wrote the letter?

10 Q. No, I'm saying OSHA's, OSHA's regulations prior to 2003  
11 required that asbestos-containing gaskets contain a warning,  
12 correct?

13 A. Unless you have objective data that demonstrates that a  
14 warning is not required.

15 Q. Correct. And so prior to this, there's a warning  
16 requirement. And what you're doing is you're sending your  
17 data to OSHA to try to get an interpretation that now because  
18 we have your data, there is no warning requirement, correct,  
19 sir?

20 A. That's not even close to being correct.

21 Q. Okay. Well, let's walk through what OSHA said. It says,  
22 "Given your findings, are gaskets and packings containing  
23 greater than 1 percent asbestos exempt from the labeling on  
24 the basis of 29 CFR," and then it lists the asbestos  
25 regulations. Do you see that, sir?

1 A. Yes.

2 Q. And OSHA's answer to you is "No," correct?

3 A. Well, it apparently is more than no but --

4 MR. HARRIS: Yes, Your Honor, for this reason we  
5 object. As he did with the Cheng paper, he's only projecting  
6 one part of one sentence, and we ask if he's going to read  
7 into the record --

8 THE COURT: I'll sustain the objection.

9 MR. HARRIS: -- what the article says --

10 THE COURT: Sustain the objection unless you include  
11 the whole sentence.

12 MR. FROST: Your Honor, I can hand him the entire  
13 document.

14 THE COURT: Let's do that, then.

15 (The document was tendered to the witness.)

16 Q. Sir, I have handed the entire OSHA response to you,  
17 correct?

18 A. Yes.

19 Q. Okay. And you would agree with me the reply was "no" to  
20 that question that you posed to them.

21 A. It goes on. Basically, what it says is that I don't have  
22 standing to ask the question period.

23 Q. Well, what it says is, "Furthermore, it is our opinion,"  
24 that's OSHA, "that your data" --

25 MR. HARRIS: Your Honor, I object. He should read

1 the whole sentence after no.

2 THE COURT: Read the sentence.

3 THE WITNESS: The reply to the question is, "No,  
4 your findings cannot be used to exempt the mentioned gaskets  
5 and packings from labeling because these provisions are  
6 directed toward the manufacturers of the gaskets and packings.  
7 Please note that the labels do not have to be affixed to the  
8 gaskets and packings or their contents if asbestos fibers have  
9 been modified by a bonding agent, coating, binder or other  
10 material provided that the manufacturer," which is highlighted  
11 by OSHA, "manufacturer can demonstrate that during any  
12 reasonable foreseeable handling, storage, disposal, processing  
13 or transportation no asbestos, concentrations of asbestos  
14 fibers in excess of the permissible exposure limit (PEL),  
15 and/or excursion limit will be released," emphasis added  
16 according to OSHA.

17 "Moreover, the manufacturer must provide the  
18 demonstration for each specific model, type or make of gasket  
19 or packing that the manufacturer wishes to exempt from the  
20 labeling." And then it goes on.

21 Q. And it goes on to say, "Furthermore, it is our opinion  
22 that your data do not demonstrate that the gaskets you  
23 examined possess the physical property that these provisions  
24 require in order to qualify for an exemption from labeling,"  
25 correct?

1 A. That's one of the things it says. There's a long  
2 paragraph here that's technical in nature.

3 Q. Right. And says, "Consequently" -- and it deals  
4 specifically with the data and how the data was interpreted  
5 and how OSHA could interpret your data, correct?

6 A. It's actually the way that OSHA misinterpreted the data.  
7 The impression I had when I read this paragraph, and I'm happy  
8 to read the paragraph in its entirety and explain it. But my  
9 reading of the paragraph is that Richard Fairfax never read  
10 the manuscript I sent him.

11 Q. I understand that's your interpretation. But you will  
12 agree with me that what OSHA talked about, they looked at your  
13 data and they came to a different conclusion than you would  
14 considering your data, correct?

15 A. That's -- that is correct. And the reason why I say the  
16 impression I have is they never read the manuscript I sent  
17 them, because their argument is compound and convoluted and it  
18 comes to a conclusion that is not supported by the data I sent  
19 them.

20 Q. And, sir --

21 A. But fundamentally they said I don't have standing to ask  
22 the question.

23 Q. But they went further than that. They didn't just say  
24 you don't have standing, Dr. Boelter; have the manufacturers  
25 come. What they do is they go -- they analyze your data and

1 then they come to conclusions and what they say -- and this is  
2 part of that section. It says, "Consequently, if the same  
3 person does both tasks, the combined exposure would likely be  
4 greater. It is a reasonably foreseeable occurrence for a  
5 person to perform the same tasks in regard to 10 gaskets  
6 instead of 8 gaskets in an 8-hour period. In that event, a  
7 person could be exposed to an 8-hour time-weighted average of  
8 asbestos air concentration that could exceed the 8-hour TWA  
9 PEL of 0.1 fibers of CC."

10 And what OSHA is basically saying is that if you change  
11 the assumptions, then you could be in violation of those TLVs  
12 and therefore you still have to have a label, correct?

13 A. That's where the convoluted argument comes into play.  
14 There are three specific elements to that paragraph, and I'm  
15 happy to explain them if you like.

16 Q. That was OSHA's conclusion, you agree with me on that.

17 A. That was OSHA's erroneous conclusion --

18 Q. Okay.

19 A. -- based on a manuscript they apparently didn't read, and  
20 I would be happy to explain that if you like.

21 Q. Would you agree with me that they read it enough to draw  
22 and actually analyze a different scenario than the one that  
23 you presented by just changing the amount of time someone  
24 works with a process, correct?

25 A. No. Their analysis is flawed. Their argument is flawed.

1 It is not supported by the data that I sent them. It's  
2 actually contradictory to the data I sent them.

3 Q. Now --

4 A. Plus in addition, the data I sent them was total fibers  
5 and they're making the assumption they're asbestos fibers and  
6 that's one of the -- that's one of the points is to get to  
7 their conclusion with my data is total fibers, not  
8 demonstrating exceedance of the PEL. The only way they can  
9 get to an exceedance of the PEL is combine events, take more  
10 events than is reasonably able to be done in a day and then  
11 assume that they're all asbestos fibers. Those are -- that is  
12 not what the manuscript talked about.

13 Q. Would you agree with me that, I guess, OSHA and you can  
14 disagree on whether you would be in violation using your  
15 numbers or not, correct, sir?

16 A. I think OSHA is correct to say I didn't have standing to  
17 ask the question and that's the reason I submitted the letter  
18 to them in the first place. So their gratuitous comments  
19 after that point are unsupported by the manuscript I sent  
20 them.

21 Q. Okay. You would agree with me, though, sir, that OSHA  
22 has never changed its labeling requirements concerning  
23 asbestos-containing gaskets, correct?

24 A. No, they changed the labeling requirements in the mid  
25 '80s when the PEL was being lowered. And it shifted from

1 being an exemption based on encapsulation to an exemption  
2 being based on objective data. And I simply was submitting  
3 data to them and I said would this be the type of data that  
4 you're looking for? That's all my question was. And they  
5 said no, for the following reason: You don't have standing.  
6 And then they went on to do an analysis that wasn't anything  
7 that I asked them to do and isn't supported by the manuscript  
8 I sent them.

9 Q. I know, but the simple answer to the question, sir, is  
10 that OSHA required, at least as of the time of your writing  
11 this letter, and even today, if you wanted to put asbestos in  
12 asbestos-containing gaskets, that you would have to put, if it  
13 contained more than 1 percent, a label on it unless you can  
14 present some data to OSHA that they believe is correct, you  
15 have to put a label on it saying it contains asbestos and  
16 warning.

17 A. I can't agree with your characterization at all. It is  
18 correct to say that it is today a requirement by OSHA to  
19 presumptively label unless you present -- unless a  
20 manufacturer presents specific data by make, model,  
21 application, all the things that OSHA talked about, that  
22 demonstrates that the PEL will not be exceeded.

23 Q. And that applies to asbestos-containing gaskets, correct?

24 A. Sure. It applies to anything that contains asbestos.

25 Q. Now, and in fact, you're aware that the EPA in 1993 tried

1 to ban asbestos-containing gaskets, correct?

2 A. Not in 1993.

3 Q. You're aware that the EPA did try to ban  
4 asbestos-containing gaskets?

5 A. Not in 1993 I'm not aware of it.

6 Q. When did they try to ban it?

7 A. Late '80s.

8 Q. So at least to the EPA in the late '80s, they felt  
9 asbestos-containing gaskets possessed such a harm that they  
10 tried to ban them?

11 A. Well, actually, that's not true. They exempted certain  
12 types of asbestos-containing gaskets in high temperature, high  
13 pressure applications because there were no alternatives. But  
14 that ban was never supported because it was never demonstrated  
15 to reduce any risk.

16 Q. In fact, what happened was manufacturers of  
17 asbestos-containing gaskets went to court to keep the ban from  
18 being in place, correct?

19 MR. HARRIS: Objection. That mischaracterizes the  
20 article. I'm not sure that any asbestos-containing gasket  
21 manufacturer made that petition to the court, and it certainly  
22 wasn't Garlock. And so we object to the mischaracterization  
23 by counsel. He knows it's not true.

24 THE COURT: I'll sustain the objection.

25 Q. Sir, are you aware of the Asbestos Information



1 Association?

2 A. I am.

3 Q. Are you aware that -- of whether Garlock was a member of  
4 the Asbestos Information Association?

5 A. I am not.

6 Q. Are you aware that the Asbestos Information Association  
7 petitioned and went to court to keep the EPA from implementing  
8 a ban of asbestos-containing gaskets?

9 A. I am not.

10 Q. But you're aware there was a ban proposed by the EPA  
11 concerning asbestos-containing gaskets, correct?

12 A. I am aware that there was a ban for a broad swath of  
13 asbestos-containing products and products that had asbestos as  
14 an ingredient that were attempted to be banned wholesale and  
15 that ban was not supported from my understanding because of  
16 the inability to demonstrate those products presented a  
17 significant risk.

18 Q. Now, in this case your report and your video that you  
19 showed, this is all the types of things that you've done in  
20 the past, correct?

21 A. I'm not sure what all those pronouns mean.

22 Q. Well, you've done simulations before where you could take  
23 a piping structure, have somebody who's a pipefitter come in  
24 and assemble a structure, have somebody come in and design a  
25 structure, and then put insulation around it. That's

1 something you've known how to do for many years, correct?

2 A. In a certain sense, sure. I was never asked to do  
3 something like that, but...

4 Q. Well, and that's my point. If you were asked in 1996 to  
5 do the same thing, you could have done that, correct?

6 A. Actually, I'm not sure.

7 Q. How is that, sir?

8 A. This was a -- this was a very sophisticated project to  
9 put together, design and to implement, and I don't -- I don't  
10 know that in 1996 that the -- that the materials and the parts  
11 and the equipment would have been available to do this.

12 Q. Well, in fact, what you talked about is that there was  
13 old insulation that you said you harvested from abatement  
14 projects. Do you remember that?

15 A. Yes.

16 Q. So what happened was is that people who were doing  
17 asbestos abatement took off old insulation, correct?

18 A. Correct.

19 Q. And when they took it off, they were taking it off very  
20 carefully to make sure they didn't damage it.

21 A. Correct.

22 Q. So that you could reuse it in this study.

23 A. No.

24 Q. Okay. They took it off so that you could hold on to it  
25 and maybe potentially use it in the future.

1 A. Hold on to it as exemplars of materials of the past.

2 Q. Okay. So what we had was people who were taking off  
3 asbestos-containing insulation and they were able to take it  
4 off in a manner that allowed you to use it in this test.

5 A. That is correct.

6 Q. And in fact, what they were able to do was to not cause  
7 any major damage to that insulation because if it caused major  
8 damage, then it wouldn't be good for your test, correct?

9 A. Well, I -- I didn't want it to be damaged because I  
10 wanted to preserve the material in as intact a condition as I  
11 could based on what I saw in the field and the way that it was  
12 used in the field.

13 Q. Correct, sir. So it's possible to take thermal  
14 insulation off of steam lines that contains asbestos and not  
15 cause damage to it, correct, sir?

16 A. Yes. It takes the right tools and the right techniques,  
17 and, sure, it's possible. But it's not something that a  
18 person is going to do when they're trying to get to a leaking  
19 pipe.

20 Q. And in fact, sir, when you did this test, were you able  
21 to do this, say, in the year 2000? Could you have done this  
22 type of simulation?

23 A. I don't know. Are you asking me did I have all the  
24 materials to do it in the year 2000?

25 Q. No, I'm asking if you had the ability. If I came to you

1 and said I want to hire you, not Garlock or Coltec or whoever,  
2 and I came to you and I said, Mr. Boelter, I want you to  
3 assemble a small piping system and then insulate it with  
4 asbestos-containing materials, not the entire system, just  
5 around the flanges, don't put any asbestos-containing gaskets  
6 in it, you could have done that for me, correct?

7 A. Well, physically I could have constructed it. The  
8 question that I would have goes to study design and that is  
9 what other questions are you trying to answer? Are you asking  
10 me to simply construct a single flange in the middle of a room  
11 and to do something to it and have it represent what?

12 So my approach as a hygienist and as an engineer is to  
13 back up and to ask what are the questions that are trying to  
14 be answered with the data that I'm trying to generate?

15 Q. Right. And if I asked you to answer the same question  
16 that you've been asked to answer in this case, whether an  
17 individual who worked as a pipefitter would have been exposed  
18 to asbestos when they're taking apart thermal insulation, you  
19 could have conducted that study for me in the year 2000,  
20 right?

21 A. In a certain sense the answer is yes, of course, I could  
22 have conducted it in the year 2000. The practical reality is  
23 the answer is no, I couldn't, because I didn't have the  
24 materials, first of all.

25 And the second is that the question -- the question could

1 not have been answered by simply putting one flange in the  
2 middle of a room at waist heighth and insulating it and taking  
3 insulation off. That would not have been an adequate study  
4 design nor exposure scenario which is what you were asking me  
5 about.

6 Q. When is the first time you could have done this 2013  
7 study? When is the first time you would have had the material  
8 and capabilities to do that?

9 A. Well, if I thought about it, I probably would have done  
10 it in 1974 when I was having a piping system insulated that I  
11 was using in a field study in a steel mill. And I was using  
12 asbestos-containing insulations and I had piping and I had  
13 flanges and, you know, that would have been the first time.

14 Q. And, sir, for the -- for your billings in this case for  
15 that study and all the time, you have billed over \$1.2  
16 million, correct?

17 A. I don't know about that. The numbers I added up based on  
18 the invoices I knew about was 850,000.

19 Q. Would it surprise you that the bills that have been  
20 submitted to us by Garlock show it to be \$1.2 million, a  
21 little bit over that?

22 A. No. It's a tremendously complicated project that took a  
23 lot of man hours and a lot of effort.

24 Q. Now, sir, the very last area I want to talk to you about  
25 is you have testified in cases all over the country for

1 asbestos-containing gasket manufacturers, correct?

2 A. Well, you know, I have testified in various venues. I've  
3 testified maybe 20 times where someone who is either a gasket  
4 manufacturer or a gasket user has presented me.

5 Q. And you remember testifying in 2008 at the *Chief Brewer*  
6 case. It was a case in Los Angeles, California.

7 A. Yes.

8 Q. And Chief Brewer was a machinist mate, correct?

9 A. I don't recall.

10 Q. Well, I can tell you since I tried that case, Chief  
11 Brewer was a machinist mate.

12 A. Okay.

13 Q. When you testified, and when you have testified in the  
14 past, you've relied on books like this, *Asbestos and Disease*,  
15 Dr. Selikoff's book, right?

16 A. Yes.

17 Q. And this is 2008. You were able -- and this book was  
18 what? 1978, right?

19 A. I believe that's correct.

20 Q. In fact, sir, are you aware that this particular book, if  
21 you go to buy it on eBay, is about \$800 because most of the  
22 asbestos defense lawyers in the country are trying to find it.

23 A. I've got a couple I'll sell you for that price.

24 Q. Well, I had to borrow this one. I don't have that much  
25 money.

1 A. Write me a check, I'll send it to you.

2 Q. Sir, you're aware, though -- you've seen this book a lot.

3 And it's been used in asbestos litigation, in gasket cases in

4 every one you've ever been involved in, right?

5 A. It's a seminal book in a certain sense, yes.

6 Q. And so this was available since 1978 until now, right?

7 A. Yes.

8 Q. Okay. And in fact, when you testify in front of juries,

9 you talk about thermal insulation and its ability to create

10 amphibole asbestos in the air and you talk about amosite,

11 right?

12 A. Yes.

13 Q. In fact, you've seen pictures and there was some

14 discussion with Mr. Liukonen about whether you could take

15 pictures on board ships. You've seen pictures on board ships

16 from the 1940s, '50s and '60s where they actually show what's

17 going on inside them, right? And show the insulation and the

18 valves and things like that. You've seen that, right?

19 A. No, I don't think I could attest that on board

20 commissioned, operating ships during the '40s, during the

21 wartime, you're going to find pictures that -- during that

22 period of time. They may have been declassified since.

23 Q. Well, that's what I -- right. But there were pictures

24 available and there's a place called the National Archives.

25 And you've seen things like this in the past that I've shown

1 up on the board, right?

2 A. Sure.

3 Q. Okay. And in the trials of these cases, what happens is  
4 there's a naval archivist who comes in and testifies I went to  
5 the National Archives. I found these pictures. These are  
6 pictures of things on board ships. They are declassified now  
7 because they're 30 years old.

8 But there's pictures of what was going on and what was  
9 seen, correct? You've seen things like that. Pictures of  
10 navy individuals sitting in their bunks and thermal insulation  
11 and things around them. You've seen all these, right?

12 A. Happy, smiling navy people --

13 Q. Right.

14 A. -- in their bunks, yes.

15 Q. And this is the type of thing that you would present.  
16 Lawyers, defense lawyers would bring these types of things and  
17 say this is what happens on board ships. These folks are  
18 sitting in their bunks and, oh, look in the back there,  
19 there's thermal insulation there and that's all amosite.  
20 You've seen that before, right?

21 A. Sure.

22 Q. And in fact, that's what you've testified to in cases  
23 like the *Brewer* case, right?

24 A. I don't remember what my testimony was in *Brewer*.

25 Q. And you'd show pictures like this where they'd show, you



1 know, folks sitting there at their bunks in the 1940s, '50s,  
2 crew quarters.

3 A. Well, as you know, I've never presented these photos.  
4 Frankly, I've never seen these photos before. I've seen  
5 photos that are similar. These are not my photos. I've never  
6 seen them. I've never presented them. That's a  
7 mischaracterization.

8 Q. But you've seen and presented these same type of photos,  
9 right?

10 A. No.

11 Q. And then they have pictures of people working on board  
12 ships.

13 And the whole discussion at those trials is whether there  
14 is amosite and people are exposed to thermal insulation just  
15 like we're having in this trial, right?

16 A. Sure.

17 Q. And in fact, all of these opinions and all of these types  
18 of materials are things that you testified to and other folks  
19 testify in the tort system, right?

20 A. No, I can't agree with your characterization. These are  
21 not my slides. I've never seen them before.

22 Q. But you have testified in cases just like this in the  
23 *Brewer* case about thermal insulation and how exposures to  
24 thermal insulations dwarf exposures to gaskets, correct?

25 A. That is correct.

1 Q. And even though these may not be the exact pictures you  
2 have used, you've seen similar pictures and used similar type  
3 pictures in asbestos litigation, correct?

4 A. I have never used these photos.

5 Q. But you've used similar --

6 A. The photos I've used are largely photos I have taken.

7 Q. Now -- and in the *Brewer* case, that actually went to  
8 verdict. You're aware of that, right, sir?

9 A. I don't remember actually. I often don't know what the  
10 results are of the cases.

11 Q. And you testified for Crane Co in that case. Do you  
12 remember that?

13 A. That's my -- that's my recollection.

14 Q. And exactly what happened was you testified for Crane Co  
15 and the jury was allowed to make an allocation as to the  
16 different liabilities of a bunch of individuals. And there's  
17 a list of them. You see that, correct, sir?

18 A. Yes.

19 Q. And what the jury then does is based on the evidence,  
20 based on your testimony and other experts, then if it finds  
21 anyone is liable, then makes an allocation. And that's what  
22 they did in the *Brewer* case, the case you testified to.

23 MR. HARRIS: Your Honor, we object to these line of  
24 questions to the extent that they're suggesting that this was  
25 a Garlock trial and Garlock was defending themselves -- or

1 defending itself. I don't know that that's the case. If  
2 Mr. Frost wants to represent to the court that Garlock was a  
3 defendant at this trial and defended itself, then I think this  
4 is appropriate. But if he's not, then this isn't appropriate  
5 at all.

6 THE COURT: So far he said he doesn't know anything  
7 about this. As far as I'm hearing, it's nothing but questions  
8 which aren't evidence, so...

9 BY MR. FROST:

10 Q. Mr. Boelter, are you aware -- and Garlock chose to settle  
11 that case prior to trial and you testified for Crane Co, but  
12 you testified about the same thing, gaskets and packings in  
13 that case. You have no memory of that?

14 A. I don't remember the *Brewer* trial. I remember being  
15 presented in -- by Crane Co in 2008 in Los Angeles.

16 Q. Okay. That might be the *Brewer* trial.

17 A. I didn't know the results of the case and I have never  
18 seen this allocation form before.

19 Q. Okay. So you wouldn't know that Garlock was given an  
20 allocation along with Johns-Manville along with other  
21 manufacturers. You just wouldn't pay attention to that.

22 A. Well, it's not that I wouldn't pay attention. This would  
23 happen after my testimony, and I don't -- I don't think I've  
24 ever known the results of a case.

25 MR. FROST: Thank you, sir.

1 THE COURT: You're welcome.

2 THE COURT: Mr. Guy.

3 CROSS EXAMINATION

4 BY MR. GUY:

5 Q. Mr. Boelter, my name is Jonathan Guy. I represent the  
6 future claimants representative, Joseph Grier.

7 I'm not here to take issue with the strengths and  
8 weaknesses of your testimony. I just want to find out one  
9 thing.

10 Your AIHA journal from 2002 talked about airborne  
11 exposure from gaskets, correct?

12 A. The manuscript that I published, yes.

13 Q. Yes, sir. And that was available to Garlock, correct?

14 A. Yes.

15 Q. And you started working for Garlock in 1993, correct?

16 A. I have never worked for Garlock.

17 Q. I'm sorry, sir. You're right. You started working for  
18 Coltec in relation to Garlock gaskets in 1993, correct?

19 A. I have never worked for Coltec, either.

20 Q. Okay. Have you worked for any -- when did you start  
21 working on Garlock-related gasket issues first?

22 A. 1993 is the first engagement that I recall of my company,  
23 Boelter Associates, involving Coltec as a client.

24 Q. In the years 2005 to 2010, as far as you know, was Coltec  
25 aware of your opinions concerning the amount of asbestos

1 fibers that a worker would be exposed to when working around  
2 Garlock gaskets?

3 A. I don't -- that sounds like a question to put to them,  
4 but I don't know why they wouldn't know what my opinions were.

5 Q. Well, you interacted with them a lot, didn't you, sir?

6 A. Between 2005 and 2010?

7 Q. No, prior to 2005 you had interacted with Coltec and  
8 Coltec's lawyers and Garlock's lawyers concerning Garlock  
9 gaskets.

10 A. Yes.

11 Q. And they were aware prior to 2005 as to your opinions  
12 concerning exposure to asbestos fibers from working around  
13 Garlock gaskets, correct?

14 A. I would hope so, yes.

15 Q. And they were, as far as you know, aware of that  
16 information when they were litigating cases, correct?

17 A. I would presume so.

18 Q. And they were aware of that information when they were  
19 settling cases, correct?

20 A. I would presume.

21 Q. Now, we know about your 2002 study which obviously  
22 predates 2005. But now we have your new study, correct, in  
23 2013 concerning asbestos insulation?

24 A. Well, the studies aren't new. The manuscript was  
25 published in 2011.

1 Q. I think you said there was nothing surprising about the  
2 results of your insulation study.

3 A. I was not surprised with the results in terms of where  
4 they fit within the data that had been published. The  
5 challenge with the historic data was how do I rely upon this  
6 when it doesn't involve pipefitters. But the removal of  
7 insulation resulting in elevated concentrations is not a  
8 surprise to me.

9 Q. And it was consistent with the opinions that you held  
10 before 2005, correct?

11 A. Yes.

12 Q. And those are opinions that you had communicated to  
13 Coltec and Garlock's lawyers, correct?

14 A. And juries and judges.

15 MR. GUY: Nothing further, Your Honor.

16 THE COURT: Okay. Thank you.

17 Mr. Harris.

18 REDIRECT EXAMINATION

19 BY MR. HARRIS:

20 Q. Mr. Boelter, you were asked about the bans but not shown  
21 any documents. There was a phase out in the late 1980s by EPA  
22 that was ultimately overturned; is that correct?

23 A. Yes.

24 Q. But some products I believe you mentioned were exempted  
25 from the phase out of products?

1 A. Yes.

2 Q. And it says, "Categories and activities not subject to  
3 this rule's ban."

4 Do you recognize this as being from the federal register,  
5 the language regarding the exemption you mentioned?

6 A. I do.

7 Q. And it says, This grouping includes a number of products  
8 they identify as packings, special industrial gaskets. "These  
9 products were generally proposed for a third stage ban or a  
10 ban via the operation of a permit system. These products are  
11 exempted from the final rule's bans because, based on  
12 currently available information, EPA has not found that they  
13 pose an unreasonable risk of injury to human health under the  
14 criteria of the Toxic Substances Control Act, Section 8," I  
15 believe. Is that what it appears to be to you?

16 A. Yes.

17 Q. Is that your understanding, that packings and certain  
18 specialty industrial gaskets were exempted from the rule's  
19 ban?

20 A. Yes.

21 Q. I want to go back quickly to the Cheng and McDermott  
22 article. Mr. Frost had projected half a sentence. I think  
23 you picked up on what they were actually saying. But he  
24 didn't show you the whole sentence. I want to read that to  
25 you if we could.

1 And where he picked up was there at the -- it says, "In  
2 addition" -- it starts out, "Asbestos gasketting materials  
3 play an important role where their special features are  
4 needed. Their use remains acceptable as long as they are  
5 still commercially available. Replacing after-service sheet  
6 gaskets and cleaning the seating surfaces under wet conditions  
7 minimizes fiber release. In addition, regardless of the  
8 exposure level, a half-face HEPA respirator should be provided  
9 as a precautionary measure," this is where he picked up, "when  
10 the seating surface cleaning involves brushing, polishing or  
11 sanding, or when handling friable asbestos-containing waste  
12 gasket materials." Is that correct?

13 A. Yes.

14 Q. I just want to flip back here to a couple of pages before  
15 where they have their data. And they studied in this paper --  
16 this was in about what year?

17 A. This would have been in the late '80s.

18 Q. Was this the first paper that appeared in the published  
19 peer reviewed literature with respect to gaskets?

20 A. Yes, it would -- I believe it appeared in '93.

21 Q. And they studied -- at the beginning of the article they  
22 discuss spiral-wound gaskets.

23 A. Yes.

24 Q. And then they discussed fabrication of gaskets, secondary  
25 manufacturing.



1 A. Yes.

2 Q. And in this part they're talking about gasket removal and  
3 this is the table of their results, correct?

4 A. Yes.

5 Q. And so they had wet removal and it was non-detectable,  
6 correct?

7 A. Yes.

8 Q. And then they had dry removal of gaskets from a couple of  
9 valve gaskets, a pump gasket, two flange gaskets. On the dry  
10 removal, the exposure level was -- the highest was 0.33,  
11 correct?

12 A. Yes.

13 Q. I believe we projected that on the chart of studies that  
14 you identified before, correct?

15 A. Yes.

16 Q. How did the -- now, the .33 or the .99 or the .11, since  
17 these are short-term samples, what standard would you compare  
18 it to under today's standards?

19 A. One fiber per CC.

20 Q. So it's one fiber per CC, and these numbers are well less  
21 than that, correct?

22 A. Yes.

23 Q. And the methods were non-detect, right?

24 A. Correct.

25 Q. And so when we looked at what Mr. Frost had projected,

1 what they're saying is that even with the wet methods and it's  
2 non-detectable, they're still recommending a half-face  
3 respirator; is that right?

4 A. Under certain conditions.

5 Q. Okay. As a precautionary measure as you noted.

6 A. Correct.

7 Q. Okay. You were asked some questions about this letter  
8 that Dr. Longo wrote, and the others that joined his letter in  
9 addition to Mr. Hatfield were not identified. In fact,  
10 they're Larry Newton and John Templin who both worked at  
11 Material Analytical Services, Dr. Longo's company; is that  
12 correct?

13 A. Yes.

14 Q. And you were -- Mr. Frost said, well, you have a paper in  
15 the published literature and Dr. Longo has a published paper  
16 in the literature. We looked at your criticisms. This is the  
17 part -- we discussed this in your direct -- the part where you  
18 addressed the MAS paper.

19 And there at the bottom at the very end of the discussion  
20 you noted, "Finally, MAS conducted two subsequent gasket  
21 studies, in part, as an effort to 'fix' the quality control  
22 problems with the studies reported in the paper. The need to  
23 'fix' the flawed studies was not disclosed in the MAS paper."

24 And you cite there as a footnote, is that Mr. Hatfield's  
25 testimony that you cited?

1 A. Yeah, I think it was. I have the list if you could shift  
2 to the footnotes if you would like to know specifically. But  
3 I believe that was Mr. Hatfield.

4 Q. Let me see if I've got that.

5 MR. HARRIS: Can we have the ELMO.

6 I tell you what, I'll just show you.

7 Your Honor, may I approach?

8 THE COURT: Yes.

9 (The document was tendered to the witness.)

10 THE WITNESS: Yes, that was the deposition of  
11 Richard Hatfield. Do you want me to give the cite on it?

12 Q. No, I think I showed it to the court during the opening  
13 statement previously.

14 MR. HARRIS: If we could switch back to the screen.

15 Q. Mr. Boelter, I also wanted to show you -- go back to the  
16 letter that -- part of it was read to the court and shown to  
17 the court. This is the exchange you had with OSHA about  
18 whether your paper would support an exemption from the caution  
19 labeling requirement by OSHA. Do you recall that?

20 A. Yes.

21 Q. And so OSHA first said that you weren't a manufacturer,  
22 right?

23 A. Correct.

24 Q. And then they also said you have to do this -- you have  
25 to apply for this exemption through -- by style numbers of the

1 gaskets, correct?

2 A. That is correct.

3 Q. Could you identify the style numbers of any of the  
4 gaskets that you were removing in your study?

5 A. No.

6 Q. And then the last part is the part that Mr. Frost focused  
7 on. "Furthermore, it is our opinion that your data do not  
8 demonstrate that the gaskets you examined possess the physical  
9 property that would support the ban."

10 But you were talking about the assumptions that OSHA was  
11 making.

12 A. That's correct.

13 Q. Can you clarify what assumptions OSHA made that you were  
14 discussing.

15 A. Sure. They made three -- they combined three sets of  
16 assumptions, one of which is the combination of techniques  
17 where they combined -- they mathematically added together the  
18 flat blade scraper with the ball peen hammer activity. There  
19 is nothing in my manuscript that would suggest that's  
20 appropriate. And based on the knowledge that I have on gasket  
21 behavior, that would be inappropriate.

22 The second was that rather than doing eight events per  
23 day, the person would do ten events per day. There's nothing  
24 to support that ten events a day could be done, yet that is  
25 their assumption.

1 And then finally, as a result of these mathematical  
2 manipulations, the value would exceed .1 fibers per CC, but  
3 the assumption is that the fibers that are being reported were  
4 asbestos in the first place and that was an assumption on my  
5 part and it was assumptions on OSHA's part. But even OSHA,  
6 for example, would not be able to cite on the basis of PCM  
7 values. They would have to verify that they're asbestos.

8 Q. So Mr. Boelter, OSHA's charge, though, is to err on the  
9 side of over protection; is that correct?

10 A. That's correct.

11 MR. HARRIS: Okay. Thank you.

12 Thank you, Your Honor. I'll pass the witness.

13 THE COURT: You can step down.

14 THE WITNESS: Thank you.

15 THE COURT: Thank you, Mr. Boelter.

16 (Witness stepped down.)

17 THE COURT: Do you have anything else you want to  
18 try to do today?

19 MR. HARRIS: Yes. We have John Henshaw to call,  
20 Your Honor.

21 THE COURT: All right. We'll go till about 5:30 or  
22 so.

23 JOHN L. HENSHAW,

24 being first duly sworn, was examined and testified as follows:

25 DIRECT EXAMINATION

1 BY MR. HARRIS:

2 Q. Please tell us your name.

3 A. John L. Henshaw.

4 Q. Where are you from?

5 A. I'm from the Ft. Myers area or Sanibel, Florida.

6 Q. What do you do for work?

7 A. I am an industrial hygienist and a safety and health  
8 professional.

9 Q. Are you a certified industrial hygienist?

10 A. Yes, sir, I am.

11 Q. How long have you been doing this type of work?

12 A. My kids say all my life and I say not quite. But it's --  
13 I started in 1975 with Monsanto, so I've been doing it for  
14 over 35 years.

15 Q. Have you held positions in professional organizations?

16 A. Yes, sir, I have.

17 Q. Have you held any positions with the government?

18 A. I have. I held a position with OSHA as the  
19 administrator, OSHA administrator.

20 Q. What did we ask you to do in this case?

21 A. You asked me -- I was asked to evaluate the extent to  
22 which the claimants in this matter might be exposed to  
23 asbestos from -- emanating from gaskets and packing versus  
24 exposures principally coming from asbestos insulation.

25 Q. Is there an established methodology in industrial hygiene

1 for conducting such an assessment?

2 A. Yes. This would be a typical exposure assessment -- or  
3 it's a very big exposure assessment, but it is a methodology  
4 that's been used in the industrial hygiene profession.

5 Q. Now, the court had ordered the current claimants answer  
6 questionnaires and submit exposure information. You've had an  
7 opportunity to review that information?

8 A. Yes, sir, I have.

9 Q. Did you review enough of those questionnaires and the  
10 depositions and the materials that were supported in order for  
11 you to have an understanding of their exposures?

12 A. Yes, sir, I have.

13 Q. And were you --

14 A. Yes, I was.

15 Q. -- able to reach any conclusions about the potential  
16 exposures associated with contact that they had with gaskets  
17 and packing compared with other exposures that the claimants  
18 may have had?

19 A. Yes, sir, and those conclusions are included in my  
20 report.

21 Q. And you have that before you or next to you.

22 A. Yes, sir, I do.

23 Q. Now, before I ask you about how you went about doing  
24 this, I'd like to ask you about what qualifies you to do this.

25 Can you tell us what your educational background is.

1 A. I have an undergraduate in -- from Appalachian State  
2 University in Boone, North Carolina, in biology and education.  
3 University of Michigan, masters of public health in 1974.  
4 And then continuing on, board certified industrial  
5 hygienist in 1979 to present.

6 And then I also served at several roles such as the  
7 president of the Industrial Hygiene Association.

8 And then currently serve as the vice president of the  
9 Academy of Industrial Hygiene, and I'll be president assuming  
10 everything goes correctly in 2014.

11 Q. You say the American Industrial Hygiene Association.  
12 Mr. Boelter told us a little bit about that. Can you tell us  
13 what that organization is.

14 A. It is the largest industrial hygiene association in the  
15 world. It's about 10,000 members. When I was president it  
16 was about 12,000. They are practicing industrial hygienists  
17 and then allied fields such as toxicology, physicians. They  
18 can also be members of the American Industrial Hygiene  
19 Association.

20 Q. Can you tell us about your work experience after you  
21 received your masters in public health.

22 A. I graduated from Michigan in December '74.

23 In 1975, I started with Monsanto Company as a field  
24 industrial hygienist. And then I moved up as manager of the  
25 industrial hygiene program, then director of the industrial



1 hygiene program.

2 In the mid '90s, I was director of Quality and Compliance  
3 Assurance for Environmental, Safety and Health for Monsanto  
4 Company, for the corporation.

5 And then in 1997, the Solutia, which is -- Solutia was  
6 created which is the business, the chemical business of  
7 Monsanto spun off in September 1997. And I became the  
8 director of Environmental, Safety and Health for Solutia.

9 And then a joint venture between Solutia -- this was in  
10 2000. A joint venture between FMC and Solutia which is the  
11 name of the company called Astaris, and it was a joint venture  
12 between those two companies. And I was the director of  
13 Environmental, Safety and Health for that company.

14 Q. So you started out as an industrial hygienist in the  
15 field for Monsanto. What type of businesses were they in  
16 where you worked as an industrial hygienist?

17 A. Well, we had multiple businesses. We had five business  
18 units at that time. The textile company, which was one of the  
19 operating companies, that's the one I was assigned to  
20 initially in '74. And that's making textiles: Nylon,  
21 polyesters, the raw material. Not making necessarily the  
22 fabric, but making the nylon yarn that's used in carpets and  
23 other kinds of applications.

24 Then I also was the industrial hygienist for the plastics  
25 and resins division which is making hydraulic fluids and a

1 number of other compounds that are used in military and  
2 industrial applications.

3 And then I had electronics.

4 I had several other job duties as an industrial hygienist  
5 that dealt with evaluating exposures in those plants.

6 Q. Were you conducting exposure assessments?

7 A. Yes, exactly. That's what -- as an industrial hygienist,  
8 our job was to evaluate workplaces and determine whether, in  
9 fact, we had people at risk of developing disease. And that  
10 would include doing monitoring sometimes or sometimes not.  
11 Evaluating the conditions and determine whether, in fact, it  
12 would put people at risk. And I did thousand -- I took  
13 thousands of samples throughout our plants during the late --  
14 mid '70s, late '70s, and early '80s.

15 Q. Now, where did you learn how to do exposure assessments?

16 A. Primarily from the University of Michigan. That is where  
17 I got my industrial hygiene and operational health training.  
18 University of Michigan, the graduate program there. And then,  
19 obviously, in the field.

20 I had responsibilities for conducting it, studying what  
21 methods would be appropriate, how to conduct the assessments,  
22 and then how to make the interpretations from the data that I  
23 had.

24 Q. What types of chemicals did you study and did those  
25 chemicals include asbestos?

1 A. Well, asbestos was probably the number one issue for the  
2 textile plant. We had miles and miles of insulated pipe, hot  
3 process. Making nylon is a very hot process. Certainly  
4 spinning the nylon. And so we had -- we had a lot of  
5 insulation in the textile plants.

6 We also had a lot of insulation in the plastics and  
7 resins because a lot of those are reactors. It's a chemical  
8 plant. A lot of piping systems, a lot of drumming operations,  
9 and very hot fluids.

10 Q. Had you collected the air samples or designed the  
11 exposure assessments yourself during that time?

12 A. My job was to design what kind of monitoring needed to be  
13 done and who to monitor. We didn't have to monitor everybody,  
14 but the assessment was done based on identifying the highest  
15 exposed, determine whether in fact their exposures were  
16 significant, and then continue work down the line.

17 So it was my job to design the programs, conduct the  
18 monitoring, and make the call, basically, as to whether  
19 they're at risk or not.

20 Q. Have you collected air samples in the field?

21 A. Yes, sir, I have.

22 Q. Hundreds or tens --

23 A. Thousands. Thousands of samples. It depends on what --  
24 what the material was. Asbestos samples, benzene,  
25 acrylonitrile, a number of compounds that we were concerned

1 about. And I had to make a determination as to whether we had  
2 people overexposed.

3 Q. Did you ever conduct a retrospective of the exposure  
4 assessment?

5 A. Yes, sir. We had a number of epidemiologists and  
6 occupational physicians on staff and my job was to determine  
7 to what degree they were exposed because we were doing it  
8 retrospectively. So we were trying to determine what people  
9 were exposed to in the '40s, '50s, and '60s when we didn't  
10 have data. Or we may have had data but we had to make a  
11 determination as to what level people were exposed to. So  
12 that was a retrospective study and -- exposure assessment.

13 Q. Is that similar to the work that you did in connection  
14 with this case?

15 A. It is similar. This is done by occupations and what we  
16 understand from the testimony of what people did. In the case  
17 of Monsanto, I had actual personnel records, I had other  
18 records to call upon, but it was the same process:  
19 Determining what tasks were being done, assigning exposure  
20 values to those tasks, and then making an assessment as to  
21 what the cumulative exposure or total exposure was to those  
22 employees.

23 Q. So you became the OSHA administrator in what year?

24 A. 2001.

25 Q. And what was the process by which you were selected to be

1 the head of OSHA?

2 A. I don't know the entire process, but I was -- the  
3 congressman and senator from my district, senator from  
4 Missouri and the congressman from my district put my name in  
5 coming from business, coming from knowing the people OSHA  
6 regulates and controls, trying to make it at least -- my job  
7 was to make sure it works as opposed to a regulator possibly  
8 without any kind of business experience. They can throw  
9 anything out, but if people don't understand it and do it,  
10 then it's not going to be effective. So they wanted somebody  
11 who knew how to make it work in the workplace. And --

12 Q. You were -- I'm sorry, go ahead.

13 A. Well, then I put my name in for -- at the first time, the  
14 Bush/Cheney transition team. I was asked to come to the White  
15 House personnel for an interview. Eventually I got  
16 interviewed, and I was nominated by President Bush in June of  
17 2001.

18 Q. And then is that an appointment that requires senate  
19 confirmation?

20 A. Yes, sir. I was confirmed by Ted Kennedy's committee  
21 which is the health committee of the senate in August of 2001.

22 Q. So I want to ask you a little bit more about OSHA. We  
23 know generally what it is. But can you tell us what is your  
24 responsibility as the administrator of OSHA?

25 A. OSHA is charged by Congress, and President Nixon signed

1 into law on December 29, 1970, the OSH Act. Under the OSH  
2 Act, OSHA is charged to assure so far as possible every  
3 working man and woman in the nation a safe and healthful  
4 working condition. That's our mission. The tools we have or  
5 the way we go about that are a number of tools. But the  
6 bottom line is we have to assure that workers have a safe  
7 workplace.

8 Q. Does OSHA have anything to do with asbestos?

9 A. Yes, a great deal.

10 Q. In what way does it affect asbestos -- or the way that  
11 asbestos is used in this country?

12 A. OSHA regulates how people are exposed and minimize  
13 exposure and make sure it's below the current PEL, the  
14 permissible exposure limit. And there are certain work  
15 practices, there are certain tools.

16 The first standard was published in 1972 which is the  
17 first OSHA rule-making under 6B rule-making under the statute  
18 which is the first full fledged asbestos -- or standard that  
19 OSHA promulgated, and that was in 1972.

20 Then they promulgated another standard in '86 and then  
21 another one in '94.

22 Q. Okay. Is the permissible exposure limit from an  
23 industrial hygiene point of view regarded as a safe or an  
24 unsafe level of exposure?

25 A. It is regarded -- again, meeting that definition, it is

1 regarded as the safe limit. OSHA enforces to that limit. And  
2 if people are exposed to less than that, OSHA has no grounds  
3 to make any action. And they are charged to provide a safe  
4 workplace and that is the permissible exposure limit in this  
5 country, the 0.1 fibers per CC as averaged over an 8-hour day.

6 Q. While you were the administrator of OSHA, did you have  
7 any contact with asbestos? Is that an issue that you ever had  
8 to address in any situation?

9 A. I did. I was confirmed in August 2001. Then  
10 September 11, 2001, we had a concern about asbestos exposure  
11 at the World Trade Center as well as the Pentagon. And our  
12 job was to determine whether, in fact, we had sufficient  
13 exposure to asbestos.

14 We began monitoring on Wednesday. The crash was on  
15 Tuesday morning. Wednesday we began monitoring. We had a  
16 great deal of data. EPA and OSHA did that. We had a great  
17 deal of data by Friday, and we continued to monitor for 12  
18 months after that during the search and rescue, clean up and  
19 recovery period at the World Trade Center.

20 Q. Did you ever have any other opportunities or was there  
21 any other times during your time at OSHA that you dealt with  
22 that -- an asbestos issue?

23 A. Frequently there's discussions at the agency with staff  
24 about asbestos, about all hazardous materials that OSHA has  
25 some responsibility for or has standards or discussions about

1 writing standards for other hazardous materials, and asbestos  
2 frequently came up.

3 But the one that I particularly remember was Senator  
4 Murray sent a letter to me in 2003, I believe, asking whether  
5 OSHA, basically, and EPA had done enough in respect to auto  
6 mechanics. And that came, I believe, in the fall of 2003.  
7 And I sent a letter back to her in February 2004.

8 Q. And what was your response?

9 A. My response was the standard is a good standard. She was  
10 asking whether the standard was protective, and I said yes.

11 And her question was were auto mechanics exposed to  
12 sufficient levels to increase risk of disease? And the  
13 response was -- at least my part of the response was, based on  
14 the NIOSH studies -- and I believe there were 13. I'd have to  
15 go back and look at that. But I think there were a number of  
16 NIOSH studies. The conclusion was that our standard covered  
17 the auto mechanics just fine and there was no need for  
18 additional rule-making or additional action on OSHA's part.

19 Q. You referred to NIOSH studies. What is NIOSH?

20 A. NIOSH is the National Institute of Occupational Safety  
21 and Health and it is the sister agency that was created under  
22 the OSH Act in 1970.

23 Q. Mr. Henshaw, there's -- we have a slide here that  
24 identifies some awards that you have received. The  
25 President's Award from the American Society of Safety



1 Engineers; the Henry F. Smyth, Jr. Award, Academy of  
2 Industrial Hygiene. Can you tell us what that is.

3 A. The Henry Smyth award is an award given out once a year  
4 to an industrial hygienist who has contributed a great deal to  
5 the profession. It is a very prestigious award. And Henry  
6 Smyth was one of the pioneers in the field.

7 MR. HARRIS: Your Honor, at this time we tender  
8 Mr. Henshaw as an expert in industrial hygiene and exposure  
9 assessment.

10 MR. FINCH: No objection to that, Your Honor.

11 THE COURT: He'll be admitted as such.

12 Q. And Mr. Henshaw, I didn't cover this, but you have  
13 published a time or two in the literature; is that correct?

14 A. And this a representation of that, yes. Yes, sir.

15 Q. Let's go back and I want to ask you what is the question  
16 that we asked you to answer in connection with your work in  
17 this case?

18 A. The -- and this is important in designing any particular  
19 study is to understand what exactly you're trying to -- what  
20 question you're trying to answer. And the question is "How  
21 does the claimants' potential asbestos exposure from work with  
22 gaskets and packing compare with their exposure to asbestos  
23 from other sources associated with that work?"

24 And this is a representation coming out of an industrial  
25 catalog, a catalog showing industrial applications of

1 insulation and the gasket. And this represents the flange.  
2 And in between the two faces of flange of which there is a  
3 bolt going through, there is a compressed sheet gasket or a  
4 gasket. Then there is insulation around that flange.

5 Q. Earlier this week we went through a number of navy  
6 illustrations and diagrams on how flanges were insulated in  
7 the navy. This appears to be similar. Does this come from a  
8 maritime catalog or industrial catalog? What does this  
9 represent?

10 A. This comes out of an industrial catalog. In the work  
11 that I've done over the years, this is -- this is the way it  
12 is in the majority of our plants.

13 Q. All right. So how -- how do you know to go about  
14 answering this type of question?

15 A. Well, there's -- there are guidance documents, tools,  
16 practices that have been tried and perfected over the years on  
17 how to do an exposure assessment. And in fact, in 1983, this  
18 is the text, "Risk Assessment in the Federal Government:  
19 Managing the Process," where they identify exposure assessment  
20 is one of the critical elements in any risk assessment. You  
21 have to identify the hazard.

22 The four major steps are identify the hazard,  
23 dose-response assessment, exposure assessment, determining  
24 what people are exposed to, and then that helps characterize  
25 the risk.

1 And there's three documents published within AIHA, and  
2 the next slide shows that.

3 The first one I am showing here is the mathematical model  
4 for estimating occupational exposure to chemicals. And on  
5 page 158 they specifically mention -- and this was published  
6 in 2009. "Exposure reconstructions are useful in  
7 understanding risk and may be necessary in determining  
8 causality."

9 Q. So these are reconstructions. What does reconstruction  
10 mean?

11 A. Reconstruction is going -- looking in the past and  
12 reconstructing what that exposure -- just what I did here is  
13 trying to determine what the exposures were in the past to  
14 reconstruct that.

15 And Mr. Boelter published one of the chapters in this  
16 text.

17 Q. Oh, in this book?

18 A. Yes, sir.

19 Q. What about this, "A Strategy for Assessing and Managing  
20 Occupational Exposures"?

21 A. This was published in 2006, again, by the AIHA. And  
22 it -- it speaks to various strategies, either prospective or  
23 retrospective assessments and how to establish the right  
24 process to do that. And they specifically mentioned, which I  
25 did in this project, establish similar exposure groups. And

1 they are saying they are needed for efficient exposure  
2 assessment for each worker each day. And that's what I tried  
3 to do in this assessment.

4 Q. Okay.

5 A. And the other document is a 2008 document, I believe.  
6 "Guideline on Occupational Exposure Reconstruction." And just  
7 a typical discussion in that book: "The typical approach used  
8 to reconstruct exposures is to link the work history of an  
9 individual worker or group of similar workers to each  
10 workplace exposure scenario over the time periods of  
11 interest."

12 And that's precisely what I did in this project.

13 Q. You were linking the work history of a group of similar  
14 workers to each workplace exposure scenario over the time of  
15 interest; is that right?

16 A. That's correct. And the work history often came from the  
17 testimony of individuals or their noted job descriptions.

18 Q. All right. I have a slide here which is an excerpt of  
19 the "Reference Manual on Scientific Evidence" which is  
20 prepared by the Federal Judicial Center and it speaks or  
21 addresses exposure assessment as well; is that correct? I've  
22 shown that to you?

23 A. I've seen that document, yes. This is not a document I  
24 used for my assessment.

25 Q. Right. This is a court or lawyer document for sure.

1 It's written by Joseph Rodricks. Do you know Dr. Rodricks?

2 A. I do. And I think he's written a chapter in that  
3 reference document.

4 Q. On exposure science?

5 A. Yes, sir.

6 Q. He was actually a co-author or a -- he reviewed  
7 Mr. Boelter's pipefitter exposure assessment that Mr. Boelter  
8 testified about just earlier. Are you aware of that or do you  
9 recall that?

10 A. I think I saw his name listed, yes.

11 Q. Okay. So these are -- are these -- you just identified a  
12 few references. Does your report describe other references  
13 that talk about the methodology that you followed in the  
14 course of this project that you did?

15 A. Yes, sir. And the -- what I wanted to make sure is that  
16 we covered the universe. We understood all the data that's  
17 relevant to this process. And so looking at all available  
18 data in the literature, that's all part of this process.

19 Q. All right. Can you give us an overview of the process  
20 that you followed in this case.

21 A. Probably just three simple steps. Now, there are  
22 multiple pieces to these steps, but as an overview, first  
23 develop the similar exposure groups that we talked about  
24 earlier in the guidelines.

25 Next is to determine the exposure profile. What are

1 people exposed to in those groups?

2 And then estimate the annual cumulative exposure. And  
3 for this assessment, I attempted to establish the one-year  
4 cumulative exposure which could be extrapolated to as many  
5 years somebody was in that occupation.

6 Q. Let's talk about the first step, develop similar exposure  
7 groups. How did you go about doing this?

8 THE COURT: Before you get into that, why don't we  
9 wind up for the day.

10 MR. HARRIS: Okay.

11 THE COURT: And you can start in on this first thing  
12 in the morning. We'll be back at 9:30. See you all then.

13 MR. HARRIS: Thank you, Your Honor.

14 THE COURT: Thank you. Have a good evening.

15 (Evening recess at 5:26 p.m.)

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1 UNITED STATES DISTRICT COURT

2 WESTERN DISTRICT OF NORTH CAROLINA

3 CERTIFICATE OF REPORTER

4

5 I certify that the foregoing transcript is a true  
6 and correct transcript from the record of proceedings in the  
7 above-entitled matter.

8

9 Dated this 25th day of July 2013.

10

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12 s/Cheryl A. Nuccio  
13 Cheryl A. Nuccio, RMR-CRR  
14 Official Court Reporter

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